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# INTERNATIONAL ABSTRACT OF SURGERY

FEBRUARY, 1913

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### ANÆSTHETICS

**Bryan: Lâwen's Method of Anæsthesia.** *J. Tenn. St. M. Ass.*, 1912, vi, 240. By Surg., Gynec. & Obst.

Disregarding the failures of extradural sacral anæsthesia in the hands of numerous investigators, and following the success of Stöckel, who employed the method in obstetrical work, Lâwen established its value in surgical cases. Lâwen assigns as reason for failure with his predecessors that the patients were not kept in the upright position during and following the injection until anæsthesia occurred. If the upright posture cannot be maintained, the body may be placed in a reclining position with the pelvis lower than the thorax. The second reason for previous failures was that it required a longer time for the anæsthesia to be efficient here than elsewhere, viz., 10 to 25 minutes. The solutions employed are made as follows:

- |  |                             |       |      |
|--|-----------------------------|-------|------|
| No. 1.   | Sodii Bicarb C. P. (Merck.) | ..... | 0.15 |
|  | Sodii Chlorat               | ..... | 0.1  |
|  | Novocaine                   | ..... | 0.60 |
| Dissolve in 30 cc. of distilled water, giving a 2 per cent solution.   |                             |       |      |
| No. 2.   | Sodii Bicarb C. P. (Merck.) | ..... | 0.2  |
|  | Sodii Chlorat               | ..... | 0.2  |
|  | Novocaine                   | ..... | 0.60 |
| Dissolve in 50 cc. of distilled water, giving a 1.5 per cent solution. |                             |       |      |

The powder is placed in distilled water, brought to a boil (einmal aufgekocht), cooled down immediately, and five drops of adrenalin chloride 1:1000 are added. It is then ready for injection. The dose of No. 1 is 20 cc. and of No. 2, 20 to 25 cc., injected at the hiatus sacralis, which is an easy procedure unless the membrane covering the hiatus has ossified.

The following nerves are blocked: anococcygeal, internal pudic, inferior hæmorrhoidal, perineal, and

dorsalis penis or clitoridis. Also the visceral branches of the third and fourth sacral, and occasionally branches of the first and second sacral.

Stöckel employed the plan in 141 cases, Lâwen in 80 cases, Siebert in 52 cases, Bryan in 4 cases. It is almost uniformly productive of complete local anæsthesia and has produced no deaths and no sequelæ. The ill effects at the time are negligible.

**Crile: Anoci-Association; A New Principle in Operative Surgery.** *Texas St. J. M.*, 1912, viii, 136. By Surg., Gynec. & Obst.

In this article, Crile made use of a thorough knowledge of physiology of the nervous system and psychology in explaining his new principle in operative surgery. Anoci-association was the word coined by him and used to designate a condition of the patient in which harmful stimuli (noci-associations) are prevented from reaching the brain by blocking or paralyzing the receptor mechanisms by anæsthetics or narcotics. When these harmful stimuli, whether arising from fear on part of patient or from trauma to peritoneum or viscera, reach the brain, they give rise to exhaustion of the brain cells and excessive discharge of nervous energy. With this dissipation of nervous energy there results a general functional weakness, which gives rise clinically to condition of shock. In speaking of the part played by anæsthetics in producing brain-cell exhaustion, he states that although ether anæsthesia produces unconsciousness it apparently protects none of the brain cells against exhaustion from trauma of surgical procedures.

With the use of nitrous oxide anæsthesia there is approximately only one fourth the exhaustion of equal trauma under ether.

Considerable detail was given in discussing the effect of the emotions in causing morphologic changes and exhaustion in brain cells. Crile sug-

gests the following means to minimize or fully abolish the factors which act in an injurious manner upon the patient:

1. Great care and attention to details on part of nurses, internes, and operators.
2. Administration of small dose of scopolamin and morphia previous to operation.
3. Use of nitrous oxide given by trained nurse anaesthetist in place of ether.
4. Infiltration of entire operative field with novocaine or quinine and urea hydrochloride.
5. Relief of gas pains by use of hot packs, opiates, and enemata.

His recommendation of the principle of anoci-association is based, not altogether upon the reduction of mortality rate in his cases, but also upon the almost incredible state of preservation of patients' nervous equilibrium and the great diminution of post-operative nervous impairment.

R. W. McNEALY.

**Nicolich: Spinal Anæsthesia in Genito-Urinary Surgery** (*Rachianesthésie en chirurgie génito-urinaire*). 26th Cong. de l'Ass. fran. d'Urol., Paris, Oct. 9, 1912. By *Journal de Chirurgie*.

Many surgeons have ostracised spinal anæsthesia too completely. Thus Legueu, in his excellent *Traité d'Urologie*, says that he has abandoned it absolutely and that it may remain only as an exceptional method to be employed in special cases when all other methods of anæsthesia are contraindicated. Nicolich finds that this is an exaggerated pessimism, and that we too often forget the accidents which are caused by chloroform.

Since 1907 he has performed all operations on the genito-urinary organs with spinal anæsthesia. He has adopted the method of Jannesco, and until now has been very well satisfied with this method of anæsthesia. Saving accidents, it has never caused the death of any of his patients, while he has lost 3 patients (2 nephrectomies and 1 cystotomy) as the result of chloroform anæsthesia.

Nicolich has performed 409 operations with stovaine anæsthesia, 148 upon the kidney, 42 upon the prostate, 85 upon the bladder, 12 upon the perineum, 124 upon the genital organs. The youngest of the patients whom he has operated was 9, the oldest 87 years of age. The dose of stovaine and strichnin varied in ratio with the age and the general condition of the patient and the probable duration of the operation. The maximum dose for operations on the kidney was 5 cg. of stovaine; for operations on the bladder and on the prostate 3 cg. always sufficed.

Nicolich has examined the urine of a number of patients who showed no trace of albumin before the operation, and he has never demonstrated traces of albumin after spinal anæsthesia. He has observed post-anæsthetic headaches rather frequently, and cannot say that strichnin, added to stovaine, has avoided this complication. In 5 cases he has observed absence and in 18 cases insufficiency of

anæsthesia. Vomiting during and after the operation was exceptional.

The grave symptoms which Nicolich has not been able to relieve in the patients upon whom he has operated comprise the following: complete paralysis of the bladder, once — this symptom disappeared two weeks after the operation; syncopal condition in three patients who were very aged — one or two injections of caffeine were the cause of this condition; ocular paralysis, once — this manifested itself 15 days after the operation and disappeared within three weeks; hemiplegia of the right side and aphasia — this complaint developed 15 days after the operation and lasted twelve days. Nicolich has but very rarely observed a rise in temperature.

He is therefore persuaded that spinal anæsthesia is decidedly superior to chloroform and ether for use in genito-urinary surgery, because it is less dangerous and because it makes surgery of the bladder and the prostate much easier.

Its opponents too often forget the bad effects of chloroform and of ether, and do not take the trouble to learn whether the accidents observed after spinal anæsthesia are a consequence of the disease itself, of a mistaken indication, or of too strong a dose of stovaine.

J. DUMONT.

**Nagelschmidt: Electric Sleep.** *Berl. klin. Wchnschr.*, 1912, xlix, 1849. By Surg., Gynec. & Obst.

Nagelschmidt discusses the various currents employed in medicine. The intermittent galvanic current of Leduc possesses peculiar properties. It produces local analgesia and, if centrally applied, general narcosis. The dose for the stimulation of nerve or muscle can be regulated. The disadvantages of the current are its electrolytic effect upon the tissue, thus limiting the quantity of application. Faradic and sinusoidal currents are not constant. Nagelschmidt has constructed an apparatus which may be attached to any multostat. This induced current can be measured and regulated. It differs from the Faradic current inasmuch as it is milder and stimulates not only the pain-carrying fibres but also those conveying heat and cold sensation. A stronger current produces complete anæsthesia in the extremity, so that an operation may be done. Tactile sense is partially retained. Applied to the brain of animals, complete narcosis ensues as with the current of Leduc. The electric sleep seems not to be followed by any bad consequences. In one animal narcosis was pushed until pulse and respiration ceased. Rhythmical application of the same current resuscitated the animal. Control animals remained dead. E. C. RIEBEL.

#### SURGICAL INSTRUMENTS AND APPARATUS

**Wakefield: The Use of the Continuous Fixed Laparotomy Sponge.** *Am. J. Obst., N. Y.*, 1912, lxvi, 549. By Surg., Gynec. & Obst.

In order to obviate the leaving of a sponge in the abdomen, Wakefield has prepared for his use bags which contain each a long strip of gauze of suitable



width, one end of which is stitched securely into the bottom of the bag, the other end being free. The strips are of such length and width that three bags are ample for the usual laparotomy; several bags are in readiness, however, for each operation. In the laparotomy sheet are three pockets, one at the upper end and one on each side, which are open towards the slit in the sheet and which are each large enough to loosely hold a bag. The bags are held securely in the pockets by means of safety pins or clamps. As a sponge or pack is needed, the end of a strip is withdrawn from the bag and, as soiled,

is placed in the pocket alongside the bag; as a fresh sponge is needed, the unsoiled remaining portion of the strip is utilized. When additional gauze is needed, the pocket is emptied of its soiled contents and a fresh bag is inserted. In case the sponge is infected, the fresh bag is pinned or clamped over the pocket to shut off the infected area. When a hot pack is required, sufficient of a strip is withdrawn from a bag, wrung out of hot salt solution and placed in position. Wakefield reports that he is very much pleased with the method.

N. SPROAT HEANEY.

## SURGERY OF THE HEAD AND NECK

### HEAD

**Henschen: Diagnosis and Operative Treatment of Traumatic Subdural Hæmorrhage.** *Arch. f. klin. Chir.*, 1912, xcix, 67. By Surg., Gynec. & Obst.

Henschen discusses traumatic subdural hæmorrhage in the newborn and in adults. In the newborn, subdural hæmorrhage is frequently brought about by forceps extraction, protracted labor, contracted pelvis, abnormal positions of the head, hydrocephalus, etc. Even in a spontaneous rapid labor hæmorrhage has been known to occur, probably due to a sudden rush of blood into the delicate cerebral veins. Other factors are anomalies of the cranial bones, intracranial stasis due to an enlarged thymus or thymoid or a cord twisted around the neck, weakened vascular walls from alcoholism and other poisons and toxins absorbed from the mother, and, finally, hæmorrhagic diathesis of luetic children.

The hæmorrhage usually takes place from the large veins of the pia mater or from the cerebral sinuses. Beneke has reported 14 cases of tears in the tentorium producing the hæmorrhage. Stoltzenberg found a tear in the intervertebral joint capsule of the cervical vertebræ in 12 per cent of asphyxiated newborn children. In general, the amount of extravasated blood is from 40 to 70 cc., most of which is at the site of the injury. The hæmorrhage is usually unilateral, less often bilateral or diffuse, and most frequently located under the parietal bone. The hæmatoma may be resorbed or encapsulated. Infection sometimes occurs. Pachymeningitis hæmorrhagica interna may result. The cortex compressed by the hæmatoma undergoes softening, atrophy, and ultimately sclerosis with cyst formation and parencephalic defects. In infants, the brain is protected somewhat by the elasticity and expansibility of the skull. The importance of subdural hæmorrhage in the etiology of the infantile hemiplegias and diplegias known as Little's disease has been recognized for a long time. Epilepsy and idiocy are concomitant features. Hemianopsia, cerebellar ataxia, and pseudo-babbar palsies have been reported in hæmorrhages involving the cerebellum.

Children may be born dead, or after an interval of hours or days following normal labor become suddenly asphyxiated and die with signs of increased intracranial pressure. The hæmorrhage may increase after birth owing to a constant oozing of blood. This occurs particularly when Schultze's swappings are used to resuscitate the child. The danger of starting a fresh hæmorrhage by this method is obvious.

The symptoms vary according to the location of the hæmatoma below or above the tentorium, as has been pointed out by Seitz. A supratentorial hæmorrhage is indicated by extreme restlessness, primary bulging of the large fontanelles with blunting of their edges, widening of the lambdoid suture, narrowing of the pupil on the side of the hæmorrhage, conjugate deviation of the head and eyes, increased reflexes, and slowing of the pulse and respirations. Motor symptoms such as twitching of the face, arms, or legs, and paresis of the facialis, hypoglossus, or accessorius may occur. Lumbar puncture is negative. The best method of diagnosis is puncture of the cranial subdural space through the outermost corner of the large fontanelle.

The symptom-complex of peribullar or infratentorial hæmorrhage includes deep respirations, localized cyanosis, stiffness of the neck, spasticity of the limbs, convulsions, and secondary bulging of the fontanelles, due to stasis and œdema. Lumbar puncture, if done early, shows a hæmorrhagic fluid.

Operative interference is indicated in nearly every case, although the prognosis is absolutely bad. In cases of slight hæmorrhage of the convexity, puncture and aspiration of the extravasate through the large fontanelle should be attempted. A small trephine opening may be used in some cases. Cushing has operated on 9 cases, and successfully in 4, by making an osteoplastic flap of the parietal bone, splitting the dura and washing the blood clot off with salt solution. Drainage is indicated when the hæmorrhage cannot be stopped. In the peribullar hæmorrhages, puncture and trephining are useless. French authors report excellent results from repeated lumbar puncture. Henschen thinks



that a small trephine opening behind the mastoid may do some good.

In older children and in adults, 246 cases of traumatic subdural hæmorrhage have been reported. The hæmorrhage may come from the middle meningeal artery, the carotid artery or the arteries of the convexity, especially the sylvian artery. The large veins of the pia, the Pacchionian bodies, the internal jugular vein, or the venous sinuses may be responsible for the hæmorrhage. Lacerations, compression, or contusion of the brain substance are etiologic factors in some cases. A circumscribed hæmatoma over one hemisphere is much commoner than a diffuse hæmatoma. A diffuse hæmatoma may occur primarily from a massive hæmorrhage, or secondarily by rupturing the primary clot and gravitating to the base of the brain, where it may cause sudden death by entering the fourth ventricle. A primary circumscribed hæmatoma anatomically may be (1) peribullar, (2) median intracerebral, or (3) over the convexity.

Cortical irritation is produced by the denser portions of the clot. Small clots may not show any symptoms till increased intracranial pressure is produced by a serous exudation into the subarachnoid space with or without œdema of the brain substance.

The anatomical changes produced by slowly absorbed hæmatomas vary from simple atrophy and sclerosis to encephalitis, leptomeningitis, pachymeningitis, and cyst formations.

The clinical picture is extremely variable. Most cases do not show a so-called "free interval." The pulse is normal in many cases, according to Kocher. The symptoms are usually progressive, with localized headache, delirium, meningeal symptoms, motor symptoms, and paralysis. The diagnostic cerebral puncture of Neisser and Pollock is the surest diagnostic procedure.

Of 166 operated cases, 113 were saved. Operation should be done to prevent post-traumatic epilepsy. The danger of secondary hæmorrhage, the occurrence of continuous primary epileptiform attacks, the danger to the cortex from continual long pressure, the uncertainty of the course of the increased intracranial pressure phenomena, and the excellent prognosis of the operation, all urge immediate operative interference. The opening into the skull should be made over the centre of the extravasate. A small trephine may be sufficient. The bulk of the clot should be removed. In every case where there is a possibility of secondary hæmorrhage a drainage tube should be left in.

Henschen concludes by giving 3 case reports.

E. P. ZEISLER.

**Hartmann: Cyst of the Brain; Extirpation; Cure** (Kyste du cerveau; extirpation; guérison). *Bull. et mém. Soc. de Chir. de Par.*, xxxviii, 32, 1215.

By Journal de Chirurgie.

Hartmann has operated a young man 18 years of age for subcortical cyst of the brain, which seemed

to be traceable to a meningitis which had occurred at the age of five. This meningitis had at first provoked a paralysis, with contracture of the left upper limb, and identical condition, but much less marked, in the left lower limb. Finally it caused epileptic crises, which of late had become more and more frequent, as many as 10 to 12 attacks occurring within 24 hours.

After craniectomy, Hartmann discovered a brownish area in the cortex of the right hemisphere. This he punctured and then incised without success. Below it, however, he could feel with his finger a small round tumor, the size of a small cherry, which could be enucleated with the greatest ease and without hæmorrhage.

The effects of the operation were very gratifying, as the patient has not had a single crisis nor the slightest headache; he finds himself better than he had ever been before.

The tumor appeared to be a cyst with a fibrous wall of about 3 mm. in thickness. Its external surface was smooth and evenly rounded. Its cavity was filled with a fibrinous mass of a slightly reddish brown color, recalling the contents of old vaginal hæmatocoles.

J. DUMONT.

## NECK

**V. Mutschenbacher: The Conservative Treatment of Tubercular Glands of the Neck** (Ueber die konservative Behandlung der tuberkulösen Halslymphdrüsen). *Beitr. z. klin. Chir.*, 1912, lxxx.

By Surg., Gynec. & Obst.

There is still lacking a unanimity of opinion among surgeons regarding the treatment of surgical tuberculosis, including tubercular glands of the neck. In the beginning, the treatment of surgical tuberculosis was radical; there were extirpations, enucleations, arthrotomies, resections, and amputations. These radical measures were displaced by conservative ones which gave better results. Tuberculosis possesses a greater tendency to spontaneous cure than most of the other infections. This is especially true in surgical tuberculosis of children. The ideal treatment is radical extirpation where this can be practiced. Von Bergman's rules for operation still obtain: (1) The disease must be confined to one gland or a few contiguous nodes; (2) there must exist no periadenitis, nor periglandular phlegmon.

Von Mutschenbacher is a strong advocate of conservatism, having operated upon only 9 per cent of the 1344 cases which he treated in the last four years. The cases are divided by him into three clinical groups: Group 1, solid hard glands; Group 2, softened broken-down glands covered by intact skin; Group 3, suppurating glands with sinuses or ulcers.

Group 1. Treatment by the various ointments and oils has been disappointing. The medicament has no specific value, and the massage employed in its application does harm by dissemination of the disease. The value of fresh air treatment at the seashore or in the mountains is emphasized. Diet is of great importance in these cases, since Heubner



and Czerny have shown that alimentary intoxications, as well as improper diet and overfeeding, bring about the so-called status lymphaticus or exudative diathesis of children. There is a hyperplasia of lymphoid tissues and mucous membranes, associated with a heightened susceptibility to infection. Individual metabolism should be studied with a view of arriving at a proper diet. In general, vegetable proteids, carbohydrates, and fruits are preferred to milk and eggs. The Röntgen ray is a most valuable means of treatment, and compares most favorably with operation. Under its influence lymphoid tissue disappears, leaving only stroma.

To Finsen is due the credit for demonstrating the value of heliotherapy, where the benefits derived depend upon the action of the ultra-violet rays. Under the influence of the rays of the sun, oxidation in the tissues is promoted, and there is an increased amount of carbon dioxide given off. Red and white corpuscles are increased in number. High altitudes are preferred, owing to the purer air. Rollier advises the exposure of the entire body to the sun, but it has been found that even a local exposure of a diseased area does good. Iron and arsenic are administered internally.

Group 2. When softened, broken-down glands are incised and curetted, the result is usually a large open wound which heals slowly, leaving an unsightly scar. One of the oldest methods of treating these cases consisted in aspiration of the pus and injection of some remedy. Buehner used arsenic; Bruns, iodoform oil; Calot, naphthol camphor; Hueter, carbolic acid; Landerer, balsam of Peru; and Lannelongue, chloride of zinc. None of these remedies is a specific, but all act in such a way as to promote the exudation of lymphocytes, which, aided by their ferments, assist absorption. After aspiration, the author injected a 10 per cent iodoform-glycerin emulsion, with very satisfactory results.

Group 3. Aggressive surgical treatment in this group of cases has proven unsatisfactory. Excision and curettage generally fail to cure. All that is done is to keep the wound clean and employ the general measures before mentioned.

#### CONCLUSIONS

1. Surgical treatment should be either extremely radical or absolutely conservative. Such procedures as partial excision or curettage do more harm than good.

2. Always begin treatment conservatively, because it can do no harm and frequently converts an inoperable case into one favorable for radical treatment.

3. Conservatism should be practiced in cases of recurrence following operation. WILLIAM HESSERT.

**Sasaki: Experimental Study of the Cause of Goitre.** *Deutsche Ztschr. f. Chir.*, 1912, cxix.

By Surg., Gynec. & Obst.

E. Bircher, who has experimented upon different animals (dogs, monkeys and particularly rats) with

so-called "Korpfbrunnenwasser" (goitre water), found that he could produce nodular and parenchymatous hypertrophy and symptoms similar to those in man, by injecting the filtrate of the water which had been passed through a dense filter. While Wilms was of the opinion that soluble toxins, possibly from decaying organic matter, were the cause, Bircher was of the opinion that the substances were of colloidal nature. Sasaki examined 125 rats with regard to this question. After feeding with different toxins, such as decaying meat or bad rice, or after injecting dirt or excrements, he found that he could produce distinct hypertrophy in the rat. This could be proven by dissection and microscopic examination. Feeding at the same time, or injecting, potassium iodide or iodine failed to produce struma.

CARL BECK.

**Curschmann: Intermittent Symptoms of Exophthalmic Goitre.** *Ztschr. f. klin. Med.*, 1912, lxxvi, 242.

By Surg., Gynec. & Obst.

Observation of 3 patients, one with tabes dorsalis and two with bronchial asthma, who presented intermittent attacks of exophthalmic goitre. The tabetic was in the moderately atactic stage and suffered during severe attacks of gastric crises from fully developed symptoms of Graves' disease with bilateral exophthalmos, symptoms of Garfe and Stelwag, considerable thyroid enlargement, tachycardia, sweating and tremor of the hands. These symptoms disappeared originally with cessation of the crises; later, about 1½ years before death, exophthalmos and thyroid enlargement persisted in the intervals between the crises. The author lays stress upon the coincidence of the thyroid attacks with the gastric crises. Malaise was the first to point out that these attacks might be due to involvement of the sympathetic system; later investigations showed that they are due to sympathetic or vagus affections. The intermittent character of the attacks and their coincidence with abdominal crises stamp them as products of vago-sympathetic lesions. Papillary sympathetic symptoms were insufficiently observed on account of the Argyll-Robertson pupil. Sympathicotonic symptoms predominated during the crisis, in particular the rise in blood pressure and the tachycardia. Anacidity or subacidity of the gastric juice is a sympathicotonic symptom. This was present between and during the attacks. The profuse sweating and dermatographia may be considered as due to vagatonis. The prompt response to adrenalin administration speaks again for the sympathetic origin of these Graves symptoms. Imitation of the thyroid gland may be of nerous (sympathetic), inflammatory and genital origin. In tabes the thyroid symptoms are neurogenous. The locality in the nervous system where these imitations originate is still undetermined. Degeneration of the posterior roots shows changes in the sympathetic fibres passing through the posterior roots. Morat and others suppose affections of the thoracic sympathetic to be the cause of vasodilatory swelling



and hypersecretion of the thyroid gland. The intermittence is based upon the functional peculiarities of the vegetative system, inasmuch as chronic noxæ of anatomical or functional nature produce disturbance only when a certain inherent tolerance has been exceeded.

Two cases of bronchial asthma presented attacks of exophthalmic goitre symptoms synchronous with asthmatic attacks. Profuse diarrhœa, physical disturbance, in conjunction with all the other classical symptoms, were marked. Pharmacological

tests were as follows: Marked adrenalin mydriasis, increased tolerance to filocarpin (sympathicotonic), adrenalin-glycosuria-polyuria test negative (vago-tonia). The symptoms of intermittent Graves' disease in these cases may be interpreted in the same manner as in the tabetics; namely, as due to imitation of the nerves regulating the secretion of the thyroid gland. The cases of asthma did not show thyroid enlargement. This is not strange, as the same absence of thyroid swelling is found in cases of genuine exophthalmic goitre. E. C. RIEBEL.

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[Monograph.] Cushing: The Pituitary Body and Its Disorders. Clinical States Produced by Disorders of the Hypophysis Cerebri. J. B. Lippincott Company, Philadelphia and London, 1912.

By Surg., Gynec. & Obst.

A résumé of a book such as this implies a somewhat unsatisfactory presentation of a practically new realm in medicine. It means an absence of detail so essential to a comprehension of these advances, and a loss, furthermore, of the author's style and enthusiasm which suggest, in a way, the stimulating environment of the book's birthplace. The following outline, then, necessarily can be little more than an amplified index of the investigator's work in this direction.

As Prof. Cushing says in his preface, "There are few subjects in medicine which promise a wider overlap upon the fields of many special workers than this one of hypophyseal disease. From the frequent direct implication of the optic nerves by the glandular enlargements, the ophthalmologist has often been the first to recognize these maladies. The neurologist's interest was early aroused through the pressure disturbances on part of the encephalon, and will be reawakened in view of the possible relation of epilepsy to glandular insufficiency. The gynecological and genito-urinary clinics have long been frequented by the fat amenorrhœics and impotent males with hypophyseal disease; and the studies of Erdheim and Stumme will give the scientific obstetrician reason for study for years to come. The experimental and morbid anatomist has been aroused to renewed interest in ductless glands, particularly from the standpoint of their interrelational activity. The importance of focusing a knowledge of these states upon the internist, and especially upon the pediatrician, is evident when we realize that, except for the adult acromegalic conditions, the manifestations of hypophyseal disease have been almost entirely overlooked; and now that organotherapy promises much for all cases of glandular insufficiency, whether adult or infantile, it will need no prodding to bring this about.

"Specialists whose activities are as divergent as those of the actinographer and the physiological chemist are now called upon, not only to aid in matters of diagnosis, but it lies in their province to add materially to our further knowledge of the

subject. To the general surgeon, duties now fall which a few years ago were entirely unanticipated—duties similar to those he has assumed in the case of such thyroid enlargements as are productive of pressure disturbances. And, needless to say, to the operating specialist in maladies of the nose and throat the subject is of prime importance, not only because the hypophysis itself abuts upon his preserves, but for the special reason that there exists a pharyngeal organ which may possibly be a not infrequent seat of disease and which may possess some physiological properties of importance to the organism."

The book, in large part, represents a correlation of a series of experimental investigations with a number of clinical states. The former make it seem very probable that such syndromes as these are due to disorders of hypophyseal functions. In acromegaly, for example, experimentalists had been endeavoring unsuccessfully for years to reproduce this picture by glandular extirpation. Not until the illuminating studies of 1908-1909 in the Hunterian Laboratory did it become known that animals who survive for long periods after partial extirpations exhibit an unmistakable symptom-complex of lessened glandular activity—a picture the reverse of acromegaly.

#### PART I

This concerns the anatomy, physiology, pathology and chemistry of the hypophysis. "Its extraordinarily well protected position, its presence in all vertebrates and persistence throughout life, its remarkably disposed and abundant blood supply, would of themselves be enough to stamp the hypophysis as an organ of vital importance. But, in addition, sympathetic nerve fibers have been demonstrated passing along these vessels to the gland."

The reactions of posterior lobe extract (acute effects) are quite similar to those of extracts of the adrenolin medulla. The extract contains, moreover, a powerful galactagogue substance, said to be more powerful than that possessed by extracts of the corpus luteum. The presence of the active principle



of this lobe in the cerebrospinal fluid is, "claimed on the basis that corresponding physiological reactions are obtained by the injection of slightly concentrated fluids of both man and animals."

"The anterior lobe is, relatively speaking, inactive, such reactions as occur with its extracts being attributable to traces of pars intermedia in the preparations."

"Repeated subcutaneous injections of sterile extracts or emulsions of the whole gland or of the posterior lobe alone, given subcutaneously (chronic effects), are apt to lead to emaciation." This is the reverse of that effected by partial extirpation leading to states of insufficiency, and indicates a stimulus to metabolic processes. No noteworthy changes were detected following corresponding injections of pars anterior extracts. The results from ingestion of extracts (dogs) have been largely negative.

With glandular transplantation experiments, the results thus far indicate some therapeutic possibilities for the method. Certain definite constitutional disturbances were observed in animals which had recovered after partial hypophysectomies, viz.: a widespread adiposity, nutritional changes in the skin and its appendages, disturbances of carbohydrate metabolism, of body temperature, of growth, and of renal secretion, sexual inactivity or actual atrophy of reproductive glands in some cases, and histological modifications in most of the other ductless glands. Such disturbances simulate some of the clinical syndromes observed in man; "and it was these findings that gave the first experimental proof that certain heretofore recognized clinical syndromes are a consequence of lessened glandular activity."

In cases of anterior lobe deficiency (pituitary gland proper) it was found that a thermic reaction occurred after injections of boiled anterior lobe extracts. This has been used as a clinical test of states of anterior lobe deficiency.

Certain interpretations are drawn by the author from the results of his own and other laboratories: "Normal posterior lobe activity is essential to effective carbohydrate metabolism, an intravenous injection of posterior lobe extract produces glycogenolysis, and its continued administration in excessive amounts leads to emaciation. A diminution of posterior lobe secretion occurring in certain conditions of hypopituitarism (whether experimentally produced or the result of disease) leads to an acquired high tolerance for sugars, with the resultant accumulation of fat."

The first experiences "with hypophysectomized adult canines deprived of all but a fragment of the pars anterior disclosed a clinical syndrome—adiposity, increased sugar tolerance, lowered body temperature, reversible sexual changes, etc., the experimental counterpart of what will be recognized in man as an adult form"—syndrome-hypopituitarism originating before adolescence versus hypopituitarism originating subsequently.

The production of corresponding hypophyseal

defects in puppies later revealed a syndrome (persistence of sexual infantilism and the additional factors of skeletal undergrowth and evident psychic disorders) corresponding with the human *typus Fröhlich*.

A consideration of the pathological aspects of the gland makes it clear that "in every case of increased intracranial tension, from whatever source, there probably occur secondary changes in the hypophysis, often with gross deformations and resultant functional disturbances which frequently elicit recognizable clinical manifestations."

The Hunterian Laboratory studies have shown the important relation of at least the posterior lobe to the excretion of carbohydrates. Since the gland may be in condition either of physiological competence or of incompetence, it is necessary that cognizance of such conditions be taken into account in all metabolism observations in these states.

## PART II

Whereas, Part I concerns the facts "acquired largely through anatomical and experimental researches upon animals," this section deals with the clinical and pathological aspects of the question in man.

Because it is often impossible, on clinical grounds, to tell whether or not many of the interpeduncular tumors are actually glandular in origin; and because recognizable hypophyseal symptoms brought about by distant lesions—cerebral tumors for example—prove to be so uniformly present, the author makes five subdivisions of these pituitary cases.

Group I. "Cases of dyspituitarism in which not only the signs indicating distortion of neighboring structures, but also the symptoms betraying the effects of altered glandular activity, are outspoken."

Group II. "Cases in which the neighborhood manifestations are pronounced, but the glandular symptoms are absent or inconspicuous."

Group III. "Cases in which neighborhood manifestations are absent or inconspicuous, though glandular symptoms are pronounced and unmistakable."

Group IV. "Cases in which obvious distant cerebral lesions are accompanied by symptomatic indications of secondary pituitary involvement."

Group V. "Cases with a polyglandular syndrome in which the functional disturbances on the part of the hypophysis are merely one, and not a predominant feature of a general involvement of the ductless glands."

"Under each of the first four groups there will naturally occur three subdivisions, namely: (1) the cases in which the clinical manifestations of past or of existing *hyperpituitarism* predominate (more particularly overgrowth, resulting in gigantism when the process antedates ossification of the epiphyses—*typus Launsi*; resulting in acromegaly when it is of later occurrence—*typus Marie*); (2) those in which the clinical manifestations of *hypopituitarism* predominate (adiposity with a persistence of both



skeletal and sexual infantilism when the process originates in childhood — *typus Fröhlich*; adiposity with sexual infantilism of the reversible form when it originates in the adult — the type we have explained on experimental grounds); and (3) the mixed or transition cases exhibiting some features of both states — in other words, with evident dyspituitarism."

The elastic character of these groupings is shown by the statement, "We must fully realize . . . that as conditions change these cases will naturally shift from one to another of the groups . . ." Again, ". . . this tentative classification fails to take into account the progressive nature of the disease."

That this arrangement is only temporary is well shown in the following: "We are unquestionably approaching a stage in our knowledge when the classification or grouping of the cases, here employed as a provisional basis for clinical use, will no longer be necessary. However, it may temporarily serve others, as it has served us; and some one, it is to be hoped, will provide a more useful subdivision, if any subdivision at all is necessary."

"Clinical states of increased functional activity — states, unfortunately, which as yet are beyond experimental reproduction — have with but few exceptions been shown to be associated with an enlargement of the gland caused by a hyperplastic or adenomatous process.

"On the other hand, clinical states of diminished functional activity, when associated with tumor, may be due either to an actual loss of glandular tissue from partial destruction by an infectious or malignant growth, by vascular disease, hæmorrhage, cyst formation, or what not, or, on the other hand, and what is perhaps more common, to the mere blocking of the secretory activities from a superimposed interpeduncular growth."

Two hundred pages are devoted to a detailed presentation of cases illustrating the various groups of cases. These are discussed in a uniform manner, an outline of which is here drawn:

Case number; name; age; occupation; address; complaint; family history; personal history; present malady; physical examination — height, weight; visceral examination — cardiovascular, blood pressure, urine, blood; analysis of hypophyseal manifestations; neighborhood symptoms, (X-ray of sella, eyes; pharyngeal exam., etc.); general pressure symptoms (eye-grounds, headache, etc.); glandular symptoms (head, hands, feet, cutaneous, hair, subcutaneous); carbohydrate tolerance; polyuria thermic reaction; other ductless glands (genitals, thyroid, adrenals). Operation. Histological picture of tissue; subsequent reports; interpretation.

This section of the book abounds in splendid illustrations of patients and pathological material. Visual field charts and X-ray plates are reproduced in each case presented.

### PART III

Here is given a general review of the incidence, symptomatology, and treatment of pituitary body

diseases. "Among the factors of an incidental nature which deserve especial comment are inheritance, developmental defects, trauma, physiological epochs of life, and infectious diseases."

Regarding inheritance, the author states that "there may be certain inherited deviations which may in all likelihood be attributable to transmissible ductless gland properties; and . . . a functional glandular instability may exist in these individuals which makes them more susceptible, under stress, to alterations which border on the pathological. Such periods of stress may occur during the course of the more serious physiological epochs of life, through accidental or operative glandular mutilations, or as a consequence of disease, notably infections."

Trauma seems unquestionably to play a certain rôle. In its relation to intracranial tumor in general it represents about 15 per cent of the author's series of some 300 cases.

Puberty, according to the author, has a very intimate relation to the pituitary body. "The rapid increase in stature which occurs during the adolescent period is in all likelihood due to an hypophyseal hyperplasia. . . . Early sexual development indicates early closure of the epiphyses; delayed puberty suggests delayed epiphyseal union. The same factor may well account for the occasional spontaneous glycosurias characterizing this period of life; and it is not improbable that during this epoch the tolerance for carbohydrates is actually low in all individuals, as is possibly true also in pregnancy, in which state a transient physiological hyperpituitarism is more clearly demonstrable.

"It is conceivable, furthermore, that the acquirement of secondary sexual characteristics . . . may in some way be dependent upon a primary hypophyseal stimulus. . . . The reverse condition — namely, failure to acquire secondary sexual characteristics, stunting of growth, and a high rather than a low tolerance for sugars — due to hypophyseal unsufficiency, is easily produced by partial experimental extirpation in preadolescent animals."

Regarding hibernation he says: "It is suggestive, at all events, that in both the physiological state of hibernation and the pathological condition of hypopituitarism there is a tendency toward unwonted sleep, a subnormal metabolism with diminution of CO<sub>2</sub> output, a definite hypæsthesia of the body to painful stimuli, and, in the males at least, an hypoplasia of the sexual glands. In the clinical states, moreover, these symptoms can be largely alleviated by glandular administration."

The hypophyseal relationship to pregnancy appears to be somewhat more clear, due especially to studies on functional hypertrophy. "It is not impossible that normal parturition may be incited by the secretion of the hyperplastic gland, which reaches its culmination in the last month of the gravid state and which periodically discharges with the menstrual cycle." Moreover, repeated involutions from the hyperplasia (or functional



hypertrophy) may bring about a physiological inactive condition of the gland. Thus a measure of hypopituitarism may account "for the excessive adiposity, loss of hair, asthenia, subnormal temperature and so on, not uncommonly seen in women after multiple pregnancies. On the other hand, the transitory clinical manifestations of gland overactivity . . . may persist, or even increase, after the termination of pregnancy."

The symptomatology of pituitary body disorders is arranged under four groupings:

#### *Group I. Neighborhood Signs and Symptoms.*

1. *Subjective disorders.* (a) Headaches: "are usually bitemporal; often severe and persistent when there is considerable glandular hypertrophy. The pituitary headaches are quite different from those incited by a general increase of intracranial tension." (b) Photophobia: "is often associated with deep orbital discomfort and sensitiveness of the eyes to pressure."

2. *Deformation of the sella turcica.* "Three types may be distinguished: (a) those associated with thickening of the clinoid processes and dorsum ephippii; (b) those with thinning from pressure absorption of these parts; and (c) those with more or less destruction of outlines. . . . A radiographic study of the subjacent sphenoid is of importance, as well as the mere configuration of the sella itself."

Under certain circumstances, stereoscopic plates are absolutely essential, "and indeed they are desirable in all cases, the head being tilted slightly so that one may look directly in the fossa. It is often necessary to make repeated exposures from different points of view, for it is disconcerting to secure a negative which discloses a well-formed though displaced and thinned-out sella when previous ones have seemingly shown complete obliteration of the structure."

"Profile radiographic measurements exceeding 15 mm. anteroposteriorly and 10 mm. in depth may be looked upon as indicating an enlargement. It is our impression that single plate exposure should be made by focusing directly over the hypophysis perpendicular to the sagittal plane, whereas stereoscopic exposure should be made from the side and above, so that one may look down into the fossa."

"It is presumable . . . that serial radiograms may under some circumstances be of value in determining whether or not the hypertrophic condition of the gland is advancing."

3. *Visual disturbances.* "The degree of implication of chiasm nerves or tracks bears no direct relation to the size of the sella."

Checked disc only appears in the late stages. The ophthalmoscope usually shows a primary atrophy. With occlusion later of the foramina of Mouro, however, "a choked disc may become superimposed on the atrophic nerve head."

"It is safe to say that the amblyopia associated with a primary atrophy more often represents a physiological block to light impulses than an actual

destruction of the nerves, as the post-operative restoration of vision in previously blind eyes in a number of individuals of the series exemplifies."

"Exophthalmos, to some degree, is shown by almost all the patients with tumor—probably a purely local stasis phenomenon."

4. *Perimetric deviations.* In all but two of the twenty-three patients showing pronounced neighborhood symptoms some distortion of the visual field has been demonstrable.

"The supposedly typical bitemporal hemianopsia, with a vertical meridian which bisects the macula is conspicuously rare in this series. . . . Homonymous defects, or tendencies in this direction are at least half as frequent as bitemporal ones."

Moreover, "unilateral amblyopia may occur with but little, if any, perimetric deviation in the field of the opposite eye; . . . and what is perhaps of greater clinical significance, mere tendencies toward temporal defects must be carefully looked for, particularly only defects limited to the color peripheries, if one wishes the perimeter to serve in making a diagnosis before the time when crude finger-tests suffice to demonstrate a complete hemianopsia."

"In all cases, the color fields are involved first; the form fields are involved later. . . . Rarely are the two eyes affected in equal degree; . . . after operation, restorations occur in reverse order. . . ."

"Oculomotor implication of some degree, in many patients, was suggested by the history of periods of double vision or was obvious from palsies apparent at the time of admission."

Nystagmia of slight degree has been observed frequently, even when the ocular movements have been unaffected by palsies.

Accompanying extrasellar lesions there may be other evidence of local implications of cerebral nerves, such as anosmia and trigeminal neuralgia. Similarly there may be uncinate seizures or evidences of frontal lobe involvement.

5. *Nasopharyngeal signs.* "A history of troublesome epistaxis is very common. It is not unusual for patients to mention an occasional unexpected and intermittent discharge of mucus into the pharynx. In view of the unquestionably close relation of many states of dyspituitarism—particularly those of primary glandular insufficiency—to lymph hyperplasia (status thymolymphaticus) it is quite probable that there may be a tendency toward adenoid formation in the pharynx."

#### *Group II. The General Pressure Symptoms.*

Diagnostic errors emphasize the necessity for care here. "Doubtless every patient with pituitary manifestations, in whom there is any suggestion of pressure symptoms, should be scrutinized with the possibility in mind either of an intracranial extension of an hypophyseal struma or of a coincident growth elsewhere. A neuroretinal oedema—ordinarily the most reliable sign of tension—may be wanting, even with extreme tension from a large tumor and



secondary hydrops of the lateral ventricles. This is occasioned by the envelopment of the optic nerves by the tumor so "as to prevent crowding down of cerebrospinal fluid under tension into Schwalbe's sheath." Vomiting "is particularly unusual in these patients. . . . Headache, therefore, may be the only symptom" (at first evident). Among the "tell-tale signs of pressure" which are of value are "the extracranial evidences of venous stasis shown by the fullness and tortuosity of the palpebral venules, as well as of the larger veins of the scalp. The X-ray . . . may show not only the signs of pressure enlargement of the diploetic channels but also points of pressure atrophy brought about by the small arachnoidal herniations of Wolbach.

### Group III. The Glandular Manifestations.

1. *Skeletal.* "One point, at least, is now generally accepted, namely, that the skeletal changes in gigantism and acromegaly are expressions of the same morbid influence." On the view of transient hyperpituitarism, Prof. Cushing makes the following explanation:

"The disease . . . is the expression of a functional instability of the pars anterior, doubtless brought about by some underlying biochemical disturbance which leads to the elaboration of a perverted or exaggerated secretion containing a hormone that accelerates skeletal growth (of the long bones if epiphyseal union is incomplete; of the acrol parts if epiphyseal ossification has taken place). Since the functional disturbance is probably a fluctuating one, with periods of increase and remission, as is known to be true of hyperthyroidism, epiphyseal ossification may occur during a period of quiescence in the disorder. A subsequent recrudescence, with resumption of the perverted functional activity, will then serve to superimpose acromegalic manifestations on primary gigantism. . . . In overgrown individuals exhibiting no acromegalic tendencies it is interesting to note that traces of the epiphyseal lives are still demonstrable."

The sellar configuration, the radial epiphyses, and the phalanges of the hand are the three most useful and convenient sources of information, at least where adult types of overgrowth are concerned. The latter "is a particularly dependable sign." There may be also mandibular or maxillary prognathism, spacing of the teeth, rounding of the shoulders, sternoclavicular enlargement, or change in the cranial configuration. Skeletal undergrowth may result from hypophyseal glandular insufficiency when the process takes its start before full stature is attained. "This is true, likewise, of deficiency in other members of the ductless gland series — in the thyroid, the adrenal, and the thyma, as is known both from clinical and experimental observations." However, "it is unwise to lay too great stress on anything other than the possibility of an indirect hypophyseal participation in the dwarfed stature characterizing the many types of infantilism.

"When the hypopituitarism dates from the

adolescent period, there occur changes other than the mere failure of full development of the long bones. Apart from the feminine disposition of the associated adiposis, the males actually possess a feminine type of skeleton, with broad pelvis and a certain degree of genu valgum. Notable, too, is the smallness and delicacy often shown by the extremities; and the tapering type of hand contrasts markedly with the "*type en longue*" of gigantism and the "*type en large*" of acromegaly, which Marie has differentiated.

2. *Cutaneous and subcutaneous.* The coarse features of acromegaly "include not only an increase in the size of the hair follicles, but also an hypertrophy of the papillae, with enlargement and activation of the secretory glands, so that the skin becomes greasy and moist. There is also an augmentation in the connective tissue of the subcutis, which may even extend to and involve the muscles, giving the tissues a dense, boggy feel, with an apparent increase in depth of the furrows of face and hands. A large part of the thickening and bogginess must be due to an accompanying edema. The tendency to hypertrichosis is marked in many of these individuals during the period of activity of the process.

"The cutaneous features of primary hypopituitarism are quite the reverse. Here the skin, except in the older patients, is smooth, transparent and notably free from moisture. Though the hair of the scalp may be abundant, it is otherwise on the body, for the axillary and pubic hair may be almost wanting, or, in the males, may assume a feminine type of distribution. The nails are apt to be small, thin and do not show the crescents at their bases. When hypopituitarism originates in adult life there is a tendency for the hair, even of the head, to become thinned."

"Pigmentation is a conspicuous feature of many of the adult states" (hypopituitarism).

*Adiposity.* "The acquirement of an excessive subcutaneous deposit of fat is one of the notable clinical features of many of these cases." Of course, deficiencies on the part of other of the ductless glands than the hypophysis may cause an increased deposition of fat.

The symptom-complex of adiposity, high sugar tolerance, subnormal temperature, slowed pulse, asthenia, and drowsiness very probably is attributable to a secretory defect of the posterior lobe. The reverse condition — emaciation, spontaneous glycosuria with hyperglycemia, and a slightly elevated temperature — follows posterior lobe administration.

It is important to bear in mind that "an internal hydrocephalus is capable of producing an insufficiency of posterior lobe secretion, and at the same time may apparently either stimulate or inhibit anterior lobe activity." Moreover, "a tumor is not essential to the clinical condition" of hypopituitarism, "for a primary posterior lobe hypoplasia may elicit the same constitutional manifestations. Hence, coupled



with obesity we may have the combination of overgrowth with sexual precocity or the reverse, or of undergrowth with sexual precocity or the reverse."

**Carbohydrate tolerance.** The factor of sugar tolerance, especially from a diagnostic standpoint, is considered to be quite important. The tolerance appears to increase directly with the degree of hypopituitarism. "In many of the outspoken cases of primary, rather than secondary, hypopituitarism, the high assimilation limit has been even more marked, one of these patients being able to retain 450 grams of levulose with no resultant mellituria; and in this case the existence of a persistent hypoglycemia was demonstrated. We have come to regard the sugar tolerance as a means of posterior lobe activity, and it is possible that the degree of hypopituitarism may be determined by an estimation of the sugar content of the blood rather than by the more tedious production of alimentary glycosuria through feeding tests."

**Polyuria and polydipsia.** In certain cases, in all probability, "the polyuria is due to the excessive elaboration of the hormone contained in the pars nervosa secretion. Confessedly, however, there is some difficulty in satisfactorily explaining the diuresis which may accompany hypopituitarism, for one would suppose that individuals in stages of glandular insufficiency would show, more consistently than they do, a lowered urinary output."

**Variations in body temperature.** "Our interpretation has been that the subnormal temperature was merely one of the many evidences of the lowered metabolic activity characterizing hypopituitarism. We have hoped that the thermic response to anterior lobe injection would be available as a measure of pars anterior activity. Further study is necessary before these reactions can be given any wide clinical application."

**Blood pressure changes.** A low arterial tension—often below 100 mm. of mercury in fairly vigorous individuals, and as low as 70 mm. from time to time, when they begin to complain of asthenia—and a slowed pulse are common features of the states of hypopituitarism.

Other symptoms of insufficient hypophyseal activity which may be present are: drowsiness and torpidity, insensitivity, constipation, and psychic disturbances. Psychic disturbances etiologically fall into two categories; (1) Those "due to the involvement of temporal and frontal lobes by the pressure distortion of a growth." These then are neighborhood signs. "Notable always is the utter lack of appreciation of, and complete indifference to, the existing condition." (2) Those "due solely to the effect, on the one hand, of an excess or perversion of glandular secretion, or, on the other, of an insufficiency of secretion." (a) With hyperpituitarism: "Here certain temperamental changes are often apparent, with wakefulness, lack of concentration, indecisiveness, irritability, distrust, and so on—

psychasthenic states which are not unlike those with which we are familiar in moderate grades of dysthyroidism." (b) With hypopituitarism: All gradations of disturbance are to be found, "from mild psychoses to extreme mental derangements with epilepsies."

#### Group IV. Symptoms Referable to Other of the Ductless Glands

"As De Lille has pointed out, we may find a suggestion of *insuffisance pluriglandulaire* combined either with hyperpituitarism or with hypopituitarism." Secondary to hypophyseal lesions three histological types of testis may be distinguished: (a) The interstitial cells are unusually abundant—fully acquired secondary characteristics. The tubules are preadolescent in type and contain no spermatozoa. (b) There is a paucity of interstitial cells—secondary characters of sex are never fully acquired. There is a feminine type of adiposity, hirsuties, and so on. The testes, however, have fully developed tubular epithelium with spermatozoa—active sexual life. (c) There is a marked lack of development of the tubules—impotence. This is accompanied by a complete absence of interstitial cells—absence of secondary sex characteristics.

In both males and females, "the reproductive function may not be impaired, even though full secondary sexual characteristics have not been acquired." It is likely that "in females as well as in males the glandular element which is responsible for the physical changes of puberty differs from that which is concerned with ovulation and reproduction, and may possibly be a function of specific interstitial cells. . . . The relation of hypophyseal disorders to the physiological activities of the ovary, other than those concerned with the acquirement of adolescent characteristics, is unquestionably a very close one, and amenorrhoea is an early symptom whether the disorder is on the side of overfunction or of underfunction."

It is the author's impression "that the thyroid gland is most apt to show enlargement in individuals with clinical evidences of past hyperpituitarism, suggesting that the same underlying biochemical factor causes an hyperplasia of both structures, rather than that the thyroid assumes a compensatory and vicarious rôle for the hypophysis."

"Symptoms are often present which are very suggestive of functional insufficiency of the suprarenal bodies—pigmentation of the skin, asthenia, low blood pressure, and hypoglycemia. These symptoms have been more pronounced in the individuals with dyspituitarism in whom evidences of former hypophyseal hyperplasia were evident."

The status ghymlymphaticus is probably "a secondary consequence of the pituitary lesion, rather than merely a coincidental disorder."

It seems likely "that changes in the pancreatic islets are less essential to disturbances of sugar metabolism than we had supposed."



"A number of successful canine pineal extirpations . . . led to no recognizable post-operative symptoms." In the human cases examined, no hyperplasia nor microscopic deviations from the normal were recognized.

These are divisible, on developmental and histological grounds, into (a) "the homoplastic growths of the pituitary body proper . . . the hypertrophies or so-called strumas of the gland itself." Here "we must distinguish the physiological from the pathological hypertrophies. In their histological configuration these adenomatous strumas show considerable variation, their chief point of resemblance lying in the neutrophilic character of the cellular elements (chromophobe struma) rather than in the anatomical disposition. (b) The extrapituitary or heteroplastic tumors which arise usually from some neighboring anlage. These are, more strictly speaking, true neoplasms which implicate the hypophysis, if at all, merely through the agency of compression.

"No case of acromegaly has been associated with a heteroplastic tumor except one in which a glandular hyperplasia and cerebellar cyst were coexistent; furthermore, in all cases of acromegaly in which a large homoplastic chromophobe struma was demonstrated, evidence of glandular insufficiency had begun to be apparent.

"On the other hand, manifestations of primary hypopituitarism always accompanied the heteroplastic tumors which served to compress the gland, and were often an accompaniment, also, of the large chromophobe strumas. These enlargements may occur, therefore, in the glands that have not undergone the primary hyperplastic transformation to which acromegaly is commonly accredited."

*Therapy.* "From a therapeutic standpoint we are confronted by a variety of problems, some of which call for mere symptomatic medicinal measures, some for operative relief, and some for the administration of glandular extracts to make up for a deficient secretion.

"Surgical measures resolve themselves into (1) a sellar decompression (a) for persistent hypophyseal headaches, (b) for the purpose of encouraging the extension of a glandular struma in the direction of the sphenoidal cells rather than into the cranial chamber; (2) the partial removal of an hyperplastic gland in the active stage of hyperpituitarism; (3) the partial removal of a tumor or struma for the relief

of neighborhood symptoms; (4) a subtemporal decompression for the palliation of pressure symptoms when an intracranial extension has occurred; (3) a subtemporal or sellar decompression, or both, to permit of the more favorable and direct application of radiotherapy; (6) the exposure of the brain or of some other organ in case of marked hypopituitarism, for the purpose of implanting a viable gland.

"The operation of choice for the majority of cases, as being less mutilating and yet one which furnishes as wide an avenue of approach as any, is a transphenoidal operation through a median inferior nasal opening, reached by sublabial incision and a submucous resection of the vomer, the turbinates being flattened but not removed. The essential precautions are: (1) to be correctly oriented in regard to the sphenoidal cells, so as to avoid a misdirected approach to the posterior ethmoidal region, (2) to be sure of the local condition by a careful stereoscopic study of X-ray negatives, and to operate under their guidance; (3) to have perfect anaesthesia; (4) to have the courage to withdraw for a second session in case there is any uncertainty as to the character of the tissue exposed after incising the pituitary capsule."

"The operation of second choice — a subtemporal procedure — may be necessary in the case of a superimposed lesion with a small sella, or when with an enlarged sella a flattened gland is interposed."

A tabulation of operative experiences with 43 cases is incorporated here.

Among other therapeutic measures is glandular administration. "Animals suffering from a known deficit of glandular secretion could be benefited by injections of extracts, by glandular feeding, or by implantations of hypophyses from other sources." This applies to human patients also, though "the therapeutic administration of extracts by mouth is fraught with many disappointments." Hypodermic and intravenous administration of the extracts is definitely more effective, although the whole question of gland transplantations is still very unsettled. "Doubtless much may be expected from these measures in the future."

With radiotherapy, the results have been very encouraging thus far. The failures to substantiate the earlier claims for the rays in exophthalmic goitre, however, prepare one for a possible like disappointment here.

E. G. GRAY.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

McKenty: On Paget's Disease of the Breast.

*Surg., Gynec. & Obst.*, 1912, xv, 457.

By *Surg., Gynec. & Obst.*

Two cases are described in detail by the author, as they both came under his personal observation. Reference is then made to Sir James Paget's definition of the disease as it first appeared in 1874.

According to Paget, this disease appears in women between the ages of 40 and 60, beginning as an eruption in or around the nipple. Retraction of the nipple then follows, and the surrounding skin becomes a florid red color and exudes an abundant, clear yellow fluid. Subsequently a carcinoma develops deep in the breast, with an intervening area of clean, healthy tissue.



The histology of the disease is as follows:

a. Proliferation of the stratum malpighii. This was regarded as characteristic of the disease by Butlin in 1876, in association with infiltration of the corium. According to several authors mentioned, this process of proliferation of the deep layers of the skin may go on to such an extent that the appearance will be that of an ordinary epithelioma.

b. Infiltration of the corium. This infiltration is due to a plasma cell infiltration, and is regarded by Unna as a defensive process against the invasion of epithelial cells into the surrounding tissues.

c. Plugging of the milk ducts. This phenomenon is due either to a proliferation of the lining epithelium of the ducts or to a spreading of the diseased epidermis.

d. Presence of coccidia. These were originally considered as a cause of the disease, but this has been denied by recent observers.

The chief points in the diagnosis are as follows: The patient is usually a parous woman over 40 years of age. The first thing noticed is an eczema in or around the nipple which resists treatment. Retraction of the nipple follows and the nipple becomes surrounded by a bright red area, which may be dry and scaly but usually exudes an abundant serum. Ultimately a deep cancer develops.

In the differential diagnosis the main things to consider are eczemas complicating pregnancy or lactation, and scabies. In these diseases the course is more acute, the trouble is usually bilateral, and the patient is usually under 40.

There are five theories as to the etiology of the disease: (1) that it is not related to cancer at all; (2) that it is caused by coccidia; (3) that it is due to irritation from without; (4) that it arises from irritation of abnormal secretion by the sebaceous glands; (5) that it is a melanoblastoma. The conclusions arrived at by the author are that the disease is due to chronic irritation, and that the source of the irritant is found in the breast itself, namely, an alteration of secretion in the involuting acini.

The only treatment which proves satisfactory is early and complete removal of the breast. Local treatment has been abandoned as worthless. X-rays have a few cures to their credit. J. H. SKILES.

**Zybell: Clinical Picture and Treatment of Empyema in Infants** (Zur Klinik und Therapie des Pleuraempyems bei Sanghirgen). *Monatschr. f. Kinderh.*, 1912, xi. By Surg., Gynec. & Obst.

This consists in an exhaustive treatise on the clinical findings and treatment of empyema in infants, a condition which has not received its proper attention heretofore. Only the more salient features can be brought out in this abstract. Zybell calls attention to the fact that empyema is very frequently followed by pus infections of other serous membranes. For the diagnosis a pleural puncture is of the greatest value. This should be done, however, not with a small needle, but with one with a large barrel, so that the thick creamy pus which is so

frequently present can be obtained. Not every case of effusion into the pleural cavity in infants is a case of empyema. Many cases which give the signs of fluid in the pleural cavity in these infants are secondary to pneumonias, and frequently the fluid is of a serous nature. One should be careful not to be too hasty in making diagnosis, as abscess of lung is a very frequent occurrence, very difficult to differentiate.

The paper consists in the report of 22 cases, in 15 of which complications existed: in 7 cases an abscess, pneumonia twice, a purulent or fibrinous pericarditis with a dry perisplenitis, 2 cases of metastatic purulent arthritis, 3 cases of purulent infection of the urinary tract, once an infection of the navel region, 4 cases of otitis media, and 5 cases of pyoderma and deep-lying abscesses of the skin.

The pus of 18 or 20 cases was examined with positive results. Of these, 14 showed an encapsulated diplococcus, evidently the pneumococcus, 3 the streptococcus, and one a mixed infection of staphylococcus and streptococcus. One empyema in this report was found at autopsy. In the others, rib resection was twice resorted to, five times they were drained without rib resection, one time pleural puncture with washing of the cavity, and 13 times simple pleural puncture. The simple pleural puncture was carried out in most cases quite frequently, in one case as often as 21 times. This case, by the way, was followed by recovery. Both cases with rib resection died. Of the 5 cases in which puncture with drainage was made, one alone lived. The case which was treated by puncture and washing of the cavity died. Of the 13 cases which were treated by simple puncture, 2 died within two hours after the puncture, which was done for diagnostic purposes. Of the other 11, 6 survived. Zybell, therefore, inclines very strongly to the treatment of empyemas in infants by the use of simple puncture. He feels that the dangers from other methods of treatment lie in the shock from the operation, the entrance of air into the pleural cavity, which has a much more serious effect in infants than in adults, because of the fact that the accessory muscles of respiration cannot be used in these children, since the chest has proportionately a much greater antero-posterior diameter than in the adult, the sternum being held high. Respiration, therefore, is principally diaphragmatic. This necessitates an increased rapidity of respiration rather than a deepened respiration, which could be accomplished with the aid of the thoracic type of breathing. C. G. GRULEE.

**Jacob: An Operation on the Posterior Mediastinum by the Wide Transpleural Route; Cure** (Un cas d'intervention sur le médiastin postérieur par la voie transpleurale large; guérison). *Bull. et mém. Soc. de Chir. de Par.*, 1912, xxxviii, 1204. By Journal de Chirurgie.

Operations within the posterior mediastinum by the transpleural route are not very numerous, and the choice of this route of access as such is strongly debated, and even condemned by a great many



surgeons, for the reason that a "wide open" pneumothorax is a very serious matter. So it is very interesting to note the good result which Jacob has obtained in this method of surgery.

On June 23, 1911, at Maroc, a soldier was seriously wounded by a rifle-shot. The ball entered at the level of the posterior border of the right axilla and did not leave the body. After grave unexpected symptoms, particularly those of a pulmonary lesion, which necessitated confinement for two months in the hospitals of Maroc, the patient was sent home to France, convalescent. He finally came back to Maroc, took part in the new operations of the war and returned to France in 1911, emaciated, tired, and complaining of pains in the thorax, in the kidneys, and in the lower limbs, also declaring that he was incapable of doing continuous work. He attributed all these troubles to the presence of the ball, which it had never been possible to locate. On January 10, 1912, he entered the hospital Val-de-Grâce and demanded that we look for the ball and extricate it.

The radiograph showed it in the middle of the posterior mediastinum, in the region occupied by the thoracic aorta, the œsophagus, the greater azygos, and the posterior surface of the heart. Its position, a little to the left of the median line, suggested that it was lodged between the aorta and the œsophagus.

To gain access, Jacob chose the left transpleural route, which he reached by a long but narrow costal trap-door flap, with a superior hinge that included the ninth and tenth ribs. There was no pleuro-pulmonary adhesion, the lung withdrawing completely upon its hilum as soon as the pleural cavity was opened. No grave accident of any kind ensued. There was only a slight apnoea, which passed away when traction was exercised upon the lung by means of a forceps. To discover the projectile it was necessary, after having pulled the lung upward and the pericardium and the heart forward, to make an incision in the mediastinal pleura, about 8 cm. in length, directly in front of where it comes in contact with the aorta. Then, after having moved the heart and the œsophagus forward, Jacob introduced his index finger and the middle finger into the mediastinum. It was only then that he felt the ball with the tip of his finger, a little to the right of the right branch of the aorta, toward the vertebral column. He was successful in extracting it. There was no hæmorrhage and the wound was closed without drainage.

The after effects of the operation were simple. There was nothing more serious than a slight serohæmatic extravasation, which necessitated opening the wound on the tenth day and draining the pleura for a few days. To-day the patient declares himself relieved of all his complaints.

In conclusion Jacob insists, first of all, upon the readiness with which he was able to explore the posterior mediastinum, despite a very small costal trap-door flap (comprising only two ribs). In the

second place he insists that a pneumothorax may be quite benign, even though the incision is wide open for a half-hour.

J. DUMONT.

**Weiss: Complications Liable in Treatment with Artificial Pneumothorax.** *Beitr. z. Klin. d. Tuberk.*, Würzburg, 1912, xxiv, Sept.

By Surg., Gynec. & Obst.

Weiss endorses the amplification of the indications for this procedure to cases of medium severity. Brauer's method of incision was used. Simple puncture was employed only when an exudate was present. Before puncturing the costal pleura a little cocaine is applied to the region to avoid shock. To avoid danger of lung injury in the presence of a thickened pleura, Weiss advises to pick up the pleura with forceps before perforation. Injury to the lung can occur when very firm adhesions exist. Veller reports a fistula of the lung following injury. The danger of sputum aspiration into the sound lung is not great. Schmidt and Torleuri mention it. Weiss never exceeds 1 litre of gas for injection. Recently smaller quantities have been used when alarming phenomena which could be attributed to an excessive quantity of gas were present in a patient. Withdrawal of 300 cm. brought marked improvement. The first insufflation serves the purpose of separating the pleural layers and of guarding against lung injury during subsequent insufflations. Subsequent insufflations will make the pneumothorax complete. X-ray examination is made before and after each secondary insufflation. The lung should not be forcibly compressed by the gas. The amount of gas used has to be regulated for the individual. Complications are apt to arise where adhesions exist. One patient showed alarming symptoms after Weiss had compressed the lower and middle lobe of the right lung. The upper lobe became detached, the apex was still adherent. Greater pressure was employed to loosen the apex (3 to 8 mm. H.g.). Two days later violent pains occurred over upper sternum; pain on swallowing, cyanosis, frequent pulse and respiration were noted. It was supposed that the apex had been detached; immediate X-ray confirmed this, and likewise an overstretching of the mediastinum. The removal of 200 ccm. of nitrogen was followed by a disappearance of all symptoms. The increased pressure began to exert its influence upon the mediastinum only after detachment of the apex. Injury of a blood-vessel by the needle is indicated by a gradual progressive rise of the manometer. The needle is best withdrawn. Weiss observed a case of gasembolism, one of the most serious accidents. Brauer reports 4 cases.

Emphysema occurs in many patients; usually it can be avoided with proper technique. A small amount of N will collect under skin when patient coughs during insufflation. Deep sutures are not always successful, especially in debilitated patients with fluorid musculature. A rigid costal pleura which does not contract at once after insufflation may lead to emphysema formation. Exudation



occurs in about 50 per cent of the cases, a great majority of which is tuberculous.

The course is exceedingly variable. Many of the most incipient cases show no symptoms and clear up in a few weeks. Some cases run the course of a febrile pleuritis. Abdominal complaints seemed to precede the onset of exudation. The character of the exudate was always serous, or sanguiniferous in the beginning; later, after the fever had run its course, they became thicker. This caused no change in symptoms or virulence. Weiss did not observe any cases of tuberculous empyema. All cases without mechanical symptoms were treated expectantly. In case aspiration is necessary, nitrogen is substituted for the fluid removed. Hæmorrhages are usually the result of lung injury; occasionally they occur spontaneously in partially decompressed lungs.

Weiss reports a case in a patient with a pneumothorax which had occurred spontaneously. The pneumothorax was maintained artificially by insufflation. X-ray showed the lung much contracted beside the spinal column. During the night patient developed a severe hæmorrhage, and while trying to breathe deeply he aspirated much blood into the sound lung and died of asphyxia. The lung contained many small cavities which had not been compressed. Nevertheless Weiss sees in severe hæmorrhages a direct indication for insufflation. He mentions 2 cases in which uncontrollable hæmorrhages were checked by insufflation. Phthisis of a pneumonic character is not suited to pneumothorax treatment (Forlanini). Weiss reports 5 cases which were treated by insufflation; in 4 the disease spread to the other lung and led to a fatal issue. Initial results were good in 3 of these patients. He does not endorse Forlanini's statement absolutely, as the chief object of pneumothorax therapy is to cure advanced cases. A case of double pneumothorax following right-sided insufflation, and probably due to a giving way of a weak spot in the anterior mediastinum, is cited as unique. The left-sided pneumothorax was diagnosed by X-ray. Withdrawal of nitrogen from right pleural cavity; recovery. The heart bears the transposition occasioned by the pneumothorax well as a rule. Alarming symptoms occurred in one case where bands might have occasioned a circulatory obstruction. Besides lateral displacement the heart is rotated and pushed away from the anterior chest wall. Occasionally murmurs are heard after the operation which were not present before. In one of his patients Weiss heard a persistent diastolic murmur over the aorta. Slight slowing of the pulse has been observed at times after the operation. Dyspeptic symptoms are frequent and attributed to pressure of the diaphragm upon the liver and stomach. Intestinal involvement is a contraindication to the operation. In cases of tuberculosis complicating diabetes, the state of the other lung has to be ascertained with the greatest of care before attempting insufflation. In a case of tuberculosis with hæmorrhagic nephritis, insufflation was followed

by good results. The nephritis disappeared within a few weeks and was probably due to toxins. Weiss points to the fact that the pneumothorax leads to contracting processes, not only in the diseased but also in the sound portions of the affected lung, and thus to incomplete re-expansion. Hence the indications for its use should be more precisely defined.

E. C. RIEBEL.

## TRACHEA AND LUNGS

**Ducuing and Boularen: Should We Suture Wounds of the Laryngotracheal Duct?** (Faut-il suturer les plaies du conduit laryngo-trachéal?) *Arch. gén. de Chir.*, 1912, vi, 1059.

By Journal de Chirurgie.

Ducuing and Boularen report a case of a man 54 years of age who, in an attempt at suicide with a pocket knife, had wounded himself in the laryngotracheal duct. The cutaneous gash was sutured 1 cm. below the hyoid bone. It was a narrow transverse cut, 3 cm. wide. Between the lips of the wound protruded a clot of blood. Air escaped only when the patient made an effort or had a fit of coughing. The patient was pale and agitated; his pulse was weak and rapid (110 beats to the minute).

Immediate intervention. After disinfection of the region with tincture of iodine the wound was enlarged. When the clot of blood which obstructed the gap in the laryngotracheal duct was removed, a shower of blood immediately splashed over the operators. The inferior laryngeal artery was tamponed and clamped with forceps.

It was found that the wound pierced the whole of the thyroid membrane and the left lateral wall of the pharynx, as far as the spinal column. The epiglottis was completely cut, near the thyroepiglottic ligament. The omosternal and thyrohyoid muscles were likewise cut on both sides. The large vessels of the neck were intact.

A whip-stitch suture of silk was taken in the lateral wall of the pharynx. Then the hyoid bone and the thyroid cartilage were brought together by means of another whip-stitch suture; the epiglottis was repaired and the whip-stitch continued as far as the termination of the right cornu of the hyoid bone. A tent was placed and the thyrosternal and omohyoid muscles fastened upon this first plane by means of a catgut suture. Another tent was then placed and the skin sutured with horsehair.

The results of the operation were excellent. The patient was fed by a sound for four days. The tents were removed two days after the operation; on the eighth day the wound had nearly healed. But pneumonia developed within six days.

Fourteen days after the operation, following a fit of coughing, the patient found that his dressing was wet with blood. The wound was opened and a small artery which was bleeding deep was clamped with forceps. Healing occurred after a slight superficial suppuration.

This case shows that, contrary to the opinion of



certain authors, suture of the laryngotracheal duct yields very good results. It also avoids the production of fistulae and subsequent stenoses.

J. DUMONT.

**Rauzier, Roger, and Baumes: Hydatid Cyst of the Apex of the Lung** (Kyste hydatique du sommet du poumon). *Montpellier Méd.*, 1912, xxxv, Oct.

By Journal de Chirurgie.

The authors report the case of a woman 56 years of age, who entered the hospital with pains in the left shoulder and the left breast, which had begun about a month and a half before. Since then the patient coughed and expectorated a mucopurulent sputum; on four or five occasions during the first weeks of the disease the sputum expectorated had also been distinctly bloody. Exploration of the pulmonary apices revealed dullness on the left and completely obscured respiration, though no abnormal murmurs were observed. This suggested that it might be an acutely developed bacillary infiltration of the apex of the lung. But the absence of Koch's bacillus from the sputum required that this diagnosis be rejected in favor of encysted pleurisy of the pulmonary apex. Therefore an exploratory puncture was decided upon.

This puncture enabled the authors to withdraw some cubic centimeters of a clear liquid which contained a number of degenerated leucocytes. The puncture was followed by grave symptoms—a very decided dyspnoea, crepitations of pulmonary oedema, sudden failure of the heart with a tendency to collapse; the patient also vomited about 400 cubic centimeters.

This whole picture recalled the phenomena of intoxication which follow puncture of hydatid cysts and have been attributed either to the toxicity of the hydatid liquid or to phenomena of anaphylaxis (Chauffard).

The clinical evidence then inclined toward diagnosis of hydatid cyst rather than toward that of pleurisy. The absence of the membranes of the hydatid or of the echinococcus hooklets, both from the vomited liquid and from that of the puncture did not divert diagnosis from hydatid cyst. The presence of cellular elements in the liquid derived from the puncture was interpreted, not as a sign of pleural inflammation but as a sign of the passage of the cyst into the state of suppuration. Fortunately the evidence furnished by examination of the blood was more conclusive.

In the first place *eosinophilia* was very much in evidence (8 per cent), and afterwards Weinberg's sero reaction was decidedly positive. We may add that radioscopy and radiography, which could not be carried out until a few days before the intervention, showed very clearly an opacity of the whole left lung (a secondary invasion of the pleura, perhaps initiated by the exploratory puncture); it was also shown that in the region adjoining the apex of the lung there was a zone somewhat more clear and the size of a mandarin orange.

After the puncture the patient expectorated, at first muco-pus and then a great deal of pus, the pus being very foetid. Fever persisted without interruption, but showed a number of wide oscillations. Dyspnoea prevailed, the heart was weak, and cachexia progressive. Professor Fargue decided to intervene.

General anaesthesia was obtained with kelene after an injection of pantopon. A long incision was made, which embraced the left breast in its concavity. As soon as the bistoury reached the deeper levels, and before the pleura had been opened, a copious flood of thick, greenish, horribly foetid pus broke forth. After a resection of three ribs, to an extent of 6 to 8 cm., the orifice of communication with the pleura was enlarged; another considerable quantity of pus flowed out; then appeared a number of perfectly characteristic hydatid vesicles. The hand could easily extract a large hydatid pocket, which measured 8 cm. in length and had a thick wall. There were also a large number of daughter vesicles, which varied in size from that of a kidney bean to the size of a large nut. These daughter vesicles appeared withered and of a slightly greenish tint, the color being due to the pus in which they were bathed. The cavity occupied by the cyst extended from the apex of the lung to the pericardium. The latter itself had been altered by the action of the pus; an orifice through which a finger could be introduced enabled one to feel the heart-sounds very distinctly. The patient succumbed an hour after the intervention.

J. DUMONT.

## HEART AND VASCULAR SYSTEM

**Von Walzel: Pericardotomy.** *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 264.

By Surg., Gynec. & Obst.

The author reports 3 cases of pericardotomy performed by von Eiselsberg and mentions the statistics of Reichard, of 32 cases, mostly of simple incisions in the fourth or fifth intercostal space. The collection of Venus, 1908, contains 87 cases. In 36 of these cases, rib or cartilage resections were performed. Von Walzel considers as indications for interference, symptoms of cardiac and pulmonary compression and marked increase in exudations. He mentions Curschmann's ideas as authoritative. Curschmann maintained that in exudative pericarditis, the heart is in contact with the anterior chest wall and pointed to the danger of its injury during paracentesis. There is danger of wounding a large coronary vessel (A. Fränkel). Valvular disease and secondary hypertrophy of the left ventricle increase the danger of injury to the heart. W. Alexander suggests inflation of the pericardium with air to prevent concretio cordis. Injury of the pleura is hard to avoid. Lundmaras' investigations show that the portion of pericardium which is not covered by pleura is very small and variable. Von Walzel cites as an advantage of resection the possibility of complete evacua-



tion. Remaining amounts of fluid may favor the formation of adhesions. In all cases, von Walzel favors resection rather than paracentesis or simple incision, especially in all purulent serofibrinous accumulations.

CASE 1. Pericarditis followed a stab wound, which healed without treatment. A month later paracentesis was done, and repeated three times. This was followed by a radical operation and recovery. Pus showed bacterium coli.

CASE 2. A child of 6 years, almost moribund; operation under local anæsthesia; resection of the cartilage of the fifth rib; drainage with two rubber tubes. Pus showed streptococcus. Recovery.

CASE 3. Man, 41 years old. Local anæsthesia. Incision 7 cm. long, parallel to fifth rib to sternum, subsequently positive pressure and ether. On opening the pericardium a large amount of serous fluid gushed out. Sterile on culture. Recovery.

The pleura could be avoided in all cases. The fold is usually surrounded by fatty tissue and connected with the transverse muscles of the thorax. All structures can be pulled aside. Fixation of the free edges of the pericardial incision to the muscles is advisable to protect the pleural cavity from infection. Drainage tubes should be changed daily.

E. C. RIEBEL.

**Boothby: Note on Intrathoracic Surgery; Division and Circular Suture of the Thoracic Aorta.** *Ann. Surg.*, Phila., 1912, lvi, 402.

By Surg., Gynec. & Obst.

The author uses an intercostal incision from the sternum to the head of the rib posteriorly, cutting the erector spinal muscle on the left side. After carefully freeing the aorta from the surrounding structures, it is delivered, cut between vessel clamps, and reunited by circular suture with No. 200 cotton sterilized in white liquid petrolatum. He urges careful attention to the details of technique for a successful result, such as avoidance of overdistention of the lung in the smaller animals in the intra-tracheal insufflation, exclusion of skin edges from the wound by silk strips, careful dissection of the aorta to avoid injury of thoracic duct from the opening of the opposite pleural cavity, and, finally, the importance of avoiding too great tension on the stay sutures in the vessel wall. He reports six operations, with four recoveries. V. C. DAVID.

### PHARYNX AND ŒSOPHAGUS

**Zeit: Congenital Atresia of Œsophagus with Œsophago-Tracheal Fistula.** *J. M. Research*, 1912, xxvii, 45.

By Surg., Gynec. & Obst.

The author advances a new hypothesis as to the etiology of this condition, based upon a case which, unlike most cases of imperforation of the Œsophagus with Œsophago-tracheal fistula found in the literature, showed no other associated malformations.

According to this hypothesis, both the atresia and

the fistula are due to one factor, faulty development—a faulty embryonic anlage of the lower limbs of the lateral ridges which in embryos of three weeks begin to separate the trachea from the Œsophagus, starting from the dorsal instead of the ventral side of the foregut, the Œsophagus becoming closed above the bifurcation of the trachea, leaving a large opening from the lower end of the ventral or tracheal tube into the lower portion of the Œsophagus. This, later on, by elongation, forms a narrow slit, establishing a permanent communication between the trachea above its bifurcation and the lower portion of the Œsophagus, the lower limbs of the lateral ridges forming the atresia of the upper portion of the Œsophagus, which then becomes a blind pouch.

The hypothesis conforms to the embryology of the parts, excludes inflammatory processes, and determines the causal element to account by one factor for the frequency and the great uniformity of this combination of atresia and fistula in so many cases.

**Guisez: Diagnosis and Treatment of Cicatricial Stricture of the Œsophagus** (*Diagnose et traitement des rétrécissements cicatriciels de l'œsophage*). 25th Cong. d. l'Ass. fran. de Chir., 1912.

By Journal de Chirurgie.

This pathological condition, due to a permanent alteration of the Œsophageal tube, is characterized by the cicatricial degeneration of its wall, giving birth to various disturbances of gradual evolution and leading to the complete obliteration of the lumen of the organ. After cancer, it is the most frequent affection of the Œsophagus.

**Diagnosis.** Cases of traumatic cicatricial lesions due to caustics, hot fluids, wounds, or foreign bodies, are easy to diagnose. There are cases in which the history is not of much assistance. The patient conceals important facts (suicidal attempts, medico-legal features). In some cases, the causative factors have passed unnoticed.

Œsophageal stenosis may be of a medical nature: the cicatrices of a round ulcer near the cardia, of ulceration occurring during infectious fever. Here the etiological diagnosis is difficult. Syphilis of the Œsophagus is very rare. Gummata do not like the Œsophagus. Therefore cicatricial Œsophageal lesions of syphilitic origin are of exceptional occurrence. Guisez has observed one case involving the upper surface of the Œsophagus and coexisting with cicatricial lesions of the pharynx.

The Œsophagoscope has shown the existence of a group of cicatricial stenoses of inflammatory origin located either at the mouth of the Œsophagus or at the cardia. In these cases one often hesitates to make a diagnosis, thinking the condition may be due to spasm, to compression from without, or to cancer, if the patient be aged. They are almost all of spasmodic origin, the spasm causing stenosis and, secondarily, Œsophagitis. Chronic inflammation causes fibroid cicatricial lesions in the wall, and these, like all other traumatic stenoses, lead sooner or later to complete stenosis.



The clinical signs, progressive dysphagia, vomiting, regurgitation, and salivation, are not sufficient to establish a diagnosis, as they are present in all forms of grave oesophageal strictures. Physical signs, that is the passage of bougies, and the X-rays give precise information as to the existence and the location of the stenosis, but none as to its nature. The oesophagoscope shows the lesions and gives exact information as to the nature of the oesophageal stenosis. Cicatricial stenoses in particular present to the experienced eye a very bright, fibrous, characteristic appearance, and upon inspection one can easily differentiate this type of stenosis from that due to compression, epithelioma, or spasm. In cases of doubt, the diagnosis can be verified by the microscopical examination of a fragment of the mucosa removed from the region bordering the stricture. With the oesophagoscope one locates the exact seat of the stenosis, its characteristics, its caliber, the nature of the dilatations or secondary diverticula above the stenosis — in fact, all conditions it is important to determine from the prognostic and therapeutic standpoint.

From the therapeutic standpoint we must determine the degree of the stenosis and its anatomical form, and whether it is passable or impassable to the exploring bougie. If the stenosis is impassable from above, it may or may not be possible to dilate the stricture. For dilatation one should select soft, olivary bougies (rubber or gum elastic bougies are preferable). All rigid instruments must be done away with, especially whalebone bougies *à boule*. They have caused many accidents.

The stricture may be of small caliber and not admit of dilatation with a soft bougie guided only by the hand. With the oesophagoscope, however, it is nearly always possible to find the remains of the oesophageal lumen, which is usually eccentric; and unless the bougie is guided by the eye, it will lose itself in the culs-de-sac above the stenosis. The lumen once found, introduce a filiform bougie, which acts as a key to subsequent dilatation. At least for the first few treatments, dilatation must be endoscopic. It should be done with rubber or gum elastic olivary bougies. By leaving the bougies in place for several hours during the first and subsequent treatments, the dilatation of the stricture is very much facilitated. If the stricture is easily accessible, as an adjunct to the treatment with dilatation one can use the laminaria tents. Some stenoses of the cardia can be dilated by the aid of balloons, such as Gottstein's balloon. The oesophagoscope has reduced markedly the number of strictures formerly considered impassable. In strictures not dilatable by these simple maneuvers, internal oesophagotomy under the guidance of the oesophagoscope has been performed. It is efficient in short valvular strictures. Speaking generally, it is better to employ circular electrolysis. Electrolysis has a dissolving and resolving action on cicatricial tissue, and can cure definitely some stenoses in which the infiltration and sclerosis are not deep.

The stenosis may be impassable from above, even with the aid of the endoscope. Then, after a preliminary gastrostomy, one must resort to retrograde catheterization. Retrograde catheterization can be tried with or without oesophagoscopy after preliminary dilatation of the mouth of the gastrostomy. In this type of stricture, gastrostomy with a large opening into the stomach is the method of choice for retrograde catheterization. In all of these cases, the opening into the stomach is retained for the purpose of feeding the patient. It is a safety valve and provides a means of feeding the patient when alimentation from above is for one reason or another impossible. The oesophagus is placed at rest, and thus oesophagitis, the principal cause of spasm, is combated.

When the oesophagus is totally impassable from above down or from below up (an unusual condition), one must resort to external surgical methods. Here gastrostomy is again the operation of choice. In late years, curative operations have received consideration — external oesophagotomy, oesophagectomy (which has been effective only in the cervical region). Some surgeons have devised ingenious methods of treatment — oesophageal gastrostomy; the implantation of the oesophagus in a fold of the stomach, which method is practicable only in stenoses situated low down; plastic operations, of which oesophago-duodeno-gastrostomy, with the creation of an oesophageal canal, is the most noteworthy example. These are serious operations and difficult ones to bring to a successful issue.

Therefore, when dilatation from above, aided by the endoscope or by means of retrograde catheterization, is not feasible, simple gastrostomy will prolong life, and this is the operation which should be performed. Only a small very number of oesophageal strictures are impassable from above down or from below up. In studying the reported cases, one comes to the conclusion that many serious operations might have been avoided if dilatation under the guidance of the oesophagoscope had been tried. It succeeds in 95 per cent of the cases. If this method fails, one should resort to retrograde catheterization, facilitated by gastrostomy with a large stomachic opening.

Is there a method which permits of direct action upon the cicatricial tissues? According to the author, circular electrolysis exerts a distinct regressive influence upon cicatricial tissue.

Forgues has had, in 20 years, 11 cases of oesophageal cicatricial stenosis; 9 followed the ingestion of lye, two were produced by the ingestion of caustic potash. From this series, Forgues evolves the following conclusions:

In cases of grave cicatricial stenosis, gastrostomy is the operation of choice. When the patient has reached the stage of malnutrition, gastrostomy is an emergency operation. It secures rest to the oesophagus and tends to suppress spasms and to quiet active inflammatory phenomena. Three of Forgues' cases, in which the strictures were im-



passable to the finest bougies, became permeable after gastrostomy. Gastrostomy can be practiced under local anæsthesia. It is of rapid execution and, except in exhausted patients, is well borne. It is essential that the opening into the stomach be continent.

It is well to keep these patients under observation and to find out in what proportion of cases one can maintain the results secured. There are some old cicatricial strictures which cannot be permanently dilated with even the newer methods. In following 8 of his cases, Forgues has found that 3 died of tuberculosis—two, 2 years after the operation; the other 9 years after. In only 3 has he obtained permanent results, and in these the treatment by dilatation was long continued. In one of these patients, a young woman gastrectomized 12 years ago, treatment was discontinued only one year ago.

Delagénière states that despite the progress of œsophagoscopy, 8 per cent of œsophageal cicatricial strictures are still impassable and belong to the domain of surgery. He reports two new cases to show the value of the endogastric route for retrograde catheterization. In one patient, a case of acute stricture, Delagénière, after opening the stomach and practicing retrograde catheterization, observed serious lesions of the stomach, and he performed a jejunostomy. The other patient had a chronic stricture. Retrograde catheterization was at first impracticable, but a small incision in the cicatricial nodule made it possible. By incising the stomach, one is enabled to explore the mucosa, to act upon the cardiac orifice, and can then make either a stomachic opening or a jejunal opening. The œsophagus is put to rest while the stricture is being gradually dilated. Rest is an indispensable factor in dilatation of the œsophagus.

The technique which Delagénière employs is as follows: A pillow is placed beneath the thorax of the patient and a high supraumbilical incision is made. The stomach is incised the same direction as the abdominal wall and as close as possible to the cardia, traction being made upon the margins of the stomach. Palpation of cardia, and by the aid of retractors this orifice is exposed to sight. This is followed either by retrograde catheterization or by puncture or division of the stricture. Closure of the stomach and creation of a stomachic or jejunal mouth. As to consecutive treatment, practice a direct progressive dilatation, or in certain cases, retrograde, if one leaves a thread passing through the mouth, the œsophagus, and the stomachic mouth.

Jacques draws attention to a method of treatment for which he finds frequent indications. Many of his patients were in such a condition of inanition that a prompt solution of the problem was necessary, and the degree of stricture forbade the passage of a sound of sufficient caliber to secure alimentation. In such cases, under the control of sight and with the aid of adreno-cocainization, he introduces in the

lumen of the œsophageal tube a semi-rigid bougie of the smallest caliber, leaves it in place, and ties it to one of the teeth of the superior maxilla. However tight the bougie is held by the stricture at first, the fibroid tissue softens after long contact with it, and in from six to twelve hours the deglutition of fluids becomes possible around the catheter left in position.

This can be left in the œsophagus for two or three weeks without any resulting ulceration or intolerance. This continual contact causes a greater or less permeability of the stenosed area, which will then allow either progressive dilatation or circular electrolysis. He believes that the method of leaving the bougie in place for a length of time is an intervention of value, comparatively easy owing to the œsophagoscope, and far more painless than internal œsophagostomy or gastrostomy.

Duvergey has had 10 cases of permeable œsophageal strictures treated by simple gradual dilatation with or without endoscopy. He believes that gradual temporary dilatation, especially when associated with œsophagoscopy, is an excellent treatment for strictures of the œsophagus; but employed alone, without the aid of electrolysis, it must be continued for many years. If dilatation is discontinued too early, the stricture that is in process of recovery recurs. Dilatation must be done with great care and gentleness. It should be done usually with the aid of the endoscope. The latter is of diagnostic and therapeutic value. Cases subjected to simple dilatation demand that bougies be passed in the œsophagus for many years. This is one of the factors which oblige the surgeon to supplement dilatation by modern methods of electrolysis.

Roux believes in gastrostomy. Œsophagoscopy, easy for the specialist, proves very difficult for the surgeon, and especially for the practitioner unfamiliar with its technique. Gastrostomy is an operation of easy execution and of absolute benignancy when done under local anæsthesia. Retrograde catheterism is child's play compared to catheterism from above down. Roux presented the photograph of a young boy on whom he performed an œsophago-jejuno-gastrostomy for an œsophageal stricture accompanied by alarming and reactionary symptoms (fever, pain, expulsion of blood-stained mucus) after each catheterism. The child fully recovered, and his new œsophagus functionates well and shows no signs of stenosis.

Frölich has observed 13 cases of œsophageal stenosis, 10 in adults. He confirms what Forgues states as to the value of gastrostomy, which alone often renders permeable to bougies, stenoses which previous to its performance were impassable. Gastrostomy is a most benign operation. He has obtained good results with fibrolysin in some cases. So as to obtain rapid dilatation of almost impassable œsophageal strictures, he has in a few instances resorted to permanent intubation. He has good results with electrolysis. Some of his patients have



had bilateral swelling of the parotid, others of the submaxillary salivary glands.

Sargon has had 33 cases. In most of them œsophagoscopy has proven valuable, either from a diagnostic point or as an aid to dilatation. Out of 33 cases he had 7 deaths, or rather 5, as there must be eliminated 2 congenital, incurable cases. These deaths were due, one to diphtheria, one to broncho-pneumonia, one to pleuro-pulmonary gangrene after cure of the œsophageal stenosis, one to cachexia existing before the dilatation, one to œsophagitis.

Therapeutically he divides his cases into three classes. In the first, the simple cases, slow and gradual dilatation suffices. The sounds must remain in position as long as possible.

In the second class, those in which œsophagoscopy is necessary, one seeks the orifice, which is usually lateral, and then dilates under control of sight, leaving the sound in place for a moment. At times one resorts to internal œsophagotomy, the indications for which are very few (membranous strictures). Sargon does not make a deep cut, he only scarifies. Œsophagoscopy is of service. Recurrence may follow its use.

In the third class are included cases necessitating external surgical intervention. Gastrostomy is indicated as an emergency operation to combat inanition in persons in whom dilatation is impossible or difficult, or when repeated dilatation of the œsophagus necessitates general anæsthesia, as in children; it excites pulmonary phenomena in patients suffering from bronchitis.

Gastrostomy performed under local anæsthesia is usually inoffensive. In children the gastric opening is always continent. It permits in complex cases retrograde œsophagoscopy, which is easy and which has given the writer some very good results. Gastrostomy allows retrograde dilatation, by the aid of which all strictures can be controlled. The difficult step is to pass a thread either from below or from above. If the thread has been passed from above one must seek it in the stomach, either with the gastroscope or, after dilatation of the orifice made by the gastrostomy, with the finger. In two cases he could not pass the thread. He then performed a low cervical œsophagostomy. Endoscopy by means of this channel was assured and without danger. He then succeeded in passing a thread and in establishing mouth feeding. As to the orifice of the œsophagostomy, it closed of itself. Both patients recovered, but one died from a pleuro-pulmonary gangrene a few months after the cure of the œsophageal stricture.

In the course of these dilatations, except in tracheotomized patients, one must never make use of retrolaryngeal continuous dilatation. In two cases in which this was done, chondritis developed and tracheotomy had to be performed. Patients recovered. The most complex cases yield to dilatation guided by the œsophagoscope. Some very right or multiple strictures yield only to gastrostomy,

to retrograde dilatation; and some necessitate high and low œsophagoscopical maneuvers. Low cervical œsophagostomy is only utilized in patients which have been gastrostomized, and then only to permit of œsophageal dilatation by the cervical wound.

Berard agrees with essayists with two exceptions. Strictures after external œsophagotomy are of only exceptional occurrence. In 10 years he has performed 17 external œsophagotomies for the removal of foreign bodies, almost always infected. He has looked up his patients, and not one presents any evidence of œsophageal stenosis. The sloughing infections which septic foreign bodies determine at the point of arrest are responsible in a large measure for the stenoses observed after external œsophagotomy.

In strictures of the simple inflammatory type, œsophagitis secondary to a pure primitive spasm is frequent. He is inclined to believe that the spasm is almost always secondary to an initial lesion of the mucosa, at the starting point of the stenosing reflexes. When strictures said to be spasmodic appear in patients past the fortieth year, one must think of a submucous neoplasm, of a slowly developing carcinoma.

Radioscopy is of value in these cases. It should precede all endo-œsophageal explorations, because an aortic aneurysm compressing the œsophagus, though not frequently found, contraindicates œsophagoscopy. In the hands of the most expert, a stenosing aneurysm, especially if its pulsations be weak, may be overlooked by the œsophagoscope. Œsophagoscopy under local or general anæsthesia is a very precious exploratory method, but it is not always possible (intense spasms, deviated cervical vertebræ, etc.). We get very little action upon œsophageal infections as long as the food in its passage keeps up irritation and infection of the ulcerated zones. Therefore, in severe cases of œsophagitis put the organ at rest as much as possible by substituting for buccal feeding rectal alimentation, the value of which is debatable, or gastrostomy. Gastrostomy performed under local anæsthesia with a continent orifice is a benign and efficient operation. The stomach must not be sutured directly to the skin. Feeding through the opening made by the gastrostomy can be suspended as soon as the œsophageal infection is healed. Often the spasm disappears after gastrostomy, and thus intra-œsophageal maneuvers are simplified. Gastrostomy allows retrograde catheterization as well as catheterization from above down, together or separately, a mode of treatment which usually cures cicatricial œsophageal stenosis of a serious nature. These methods failing, one can resort to low cervical œsophagostomy, which furnishes more direct access with endoscopy to intrathoracic strictures of small caliber.

All these methods, aided by endoscopy, enable one to cure functionally œsophageal stenoses without resorting to endothoracic procedures, the mortality of which is very high.



Oser gives the statistics of cicatricial œsophageal stenoses treated at Von Eiselsberg's clinic during the past ten years. Forty-seven patients have been treated for œsophageal stenosis, secondary to burns by caustics. In 29, corrosive liquids had been taken intentionally; in 18, by mistake. In 35 cases caustic potash had been taken; in 3, muriatic acid; in one, lye; in one, sulphuric acid; and in one, quicklime. Twenty-seven were treated slowly, with repeated dilatation of the œsophagus. Twenty-one of these were perfectly cured. He had only one death following the introduction of the bougie. In 14 cases gastrostomy followed by retrograde catheterization was ample. Ten of these patients were cured, one was not heard from, and one died of

post-operative peritonitis. Gastro-enterostomy was performed 5 times; 4 patients were completely cured. The fifth patient was not seen again. In one case, owing to a deep burn of the pylorus, the pylorus was resected. Several laparotomies were performed, one in a case of œsophageal stenosis complicated by pyloric stenosis. The patient, a woman 34 years of age, had attempted suicide by drinking nitric acid. One month after the suicidal attempt, jejunostomy was performed; one month later, gastrostomy, followed by retrograde catheterization; six months later, jejunorrhaphy and retrocolic gastro-enterostomy; and five months after this, gastrorrhaphy. The patient recovered.

J. DUMONT.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Gosset: Transverse Incision in Operations upon the Gall-Bladder and the Bile Channels** (De l'incision transversale dans les opérations sur la vésicule et les voies biliaires). *Bull. e. mém. d. l. Soc. d. Chir.*, 1912, xxxviii, 1174. By Journal de Chirurgie.

In operating upon the gall-bladder and the bile channels, the incision employed must give free access to these organs, must allow of their easy inspection, and must permit the performance of all complementary operations upon the stomach, the duodenum, and even upon the appendix. Gosset shows that of all the incisions so far recommended there is only one—the undulated incision of Kehr—which fulfills these requirements. Kehr's incision has one great defect: it does not respect the nervous fibers of the rectus muscle. There results from this a nutritional disturbance of the muscle, and the possibility of ultimate hernia formation. Personally, in 142 operations in which Gosset employed the Kehr incision and drainage, the author had four hernias, all occurring in fat subjects. Therefore, during the last few years he has had a tendency to come back to physiological incisions, and especially in surgery of the hypochondrium, to transverse incisions that spare the nervous filaments and therefore insure the normal nutrition of the muscles. Of these, the one which actually has the most advocates is the Sprengel incision. This is a hook-shaped incision so made that the short external arm of the hook corresponds to the direction of the great oblique muscles, this muscle being cut parallel to the course of its fibers. The long arm of the hook cuts transversely the right rectus abdominis muscle, and in case of need of more room, the rectus abdominis of the left side. Sprengel uses this incision at two different levels, according to the location of the liver. The high incision is in the superior portion of the epigastrium. It cuts the right abdominis muscle between the first and second aponeurotic intersections. It has the disadvantage of not leading very directly to the gall-bladder, and also of not

permitting extension outward. Therefore Gosset prefers the low transverse incision, situated three fingers' breadth above the umbilicus upon the second and third aponeurotic intersections of the rectus muscle. The patient lying horizontally upon his back, a sandbag is placed at about the level of the angle of the scapula. A transverse incision is made from the external border of the right rectus to the median line, incising the anterior sheath of the rectus muscle. The muscular fibers are rapidly divided, hæmorrhage from the epigastric artery being controlled by hæmostatic forceps. The posterior sheath and the peritoneum are divided and the abdominal cavity is opened. Retractors are inserted, the wound edges forcibly separated, and a few instants are devoted to inspection and exploration. One determines then whether or not to prolong the transverse incision. The external hook recommended by Sprengel increases the operative field and facilitates drainage. To obtain more room, it may be necessary to incise the left rectus muscle. This long transverse incision is not mutilating, or only slightly so. It does not cut any muscle fibers, and its closure, in the opinion of those who have used it, is not difficult. It has been said that this transverse incision is time-consuming—Kehr speaks of from 15 to 20 minutes. Gosset has never taken more than two or three minutes to make this incision. It has also been said that after division of the left rectus muscle, the distended stomach protrudes into the operative wound. A large compress, slipped under the left lip and retained in position by a retractor, controls the stomach.

The interesting point is the ease of access that the Sprengel incision gives to the deep biliary channels. When one is accustomed to Kehr's incision, the first attempts with the Sprengel incision are unsatisfactory; but one quickly becomes accustomed to this method, and learns by the clever use of retractors to utilize it to the best advantage. Except in the very complex cases one learns to content himself with the single division of the right abdom-



inal muscle. In fact, Kehr himself has abandoned the undulated incision; he now incises vertically the linea alba, in the epigastric notch, and supplements this by a complete transverse division of the rectus muscle. After having practiced upon the biliary tract the indicated operation, it is well before establishing drainage and closing the abdominal wall to seek the appendix and to remove it. If the appendix has a low position, is adherent and has never caused any disturbance, it may be left in place; but if removal is deemed necessary, it is easily accomplished through this incision.

Drainage will be established at the external angle of the incision. Gosset always drains, even after a simple uncomplicated cholecystectomy with closure of the cystic duct, because the ligature of the cystic duct may slip and then drainage is a precious help; also the denuded hepatic surface, formerly covered by the gall-bladder, may give rise to an outflow of bile for the first 48 hours, and drainage enables this bile coming directly from the liver to escape externally. After operation upon the infected common bile duct, drainage is essential. The drainage tube is put directly into the hepatic duct and gauze wicks are placed in contact with the opening in the common duct. Gosset sutures the abdominal wall almost completely. This abdominal closure is in two layers: U-shaped sutures approximate the deep sheath of the rectus; interrupted including the muscular fibers and the anterior sheath of the rectus; cutaneous stitches.

In four cases of cholecystectomy, Cunéo made use of the transverse incision. This incision gives ample room. In easy cases one can often avoid cutting the rectus muscle by vertically dividing the outer border of the anterior sheath of the rectus and then retracting the muscular fibers inwardly. The transverse incision can be employed in a large number of abdominal operations, especially in nephrectomy. J. DUMONT.

**Fitchbein: A Contribution to the Bacteriology of Peritonitis, with Special Reference to Primary Peritonitis.** *Am. J. M. Sciences*, 1912, cxliv, 502. By Surg., Gynec. & Obst.

This paper is written with two purposes as its object: (1) to discuss the records in the pathological laboratory of Rush Medical College, of bacteriological examinations made of material obtained from the peritoneal cavity after death from peritonitis; and (2) to compare the results of this analysis with other reports on the bacteriology of peritonitis. The statistics compiled by Flexner from cases in Johns Hopkins Hospital and those by Monahan from the Massachusetts General are taken by the author to be the most reliable and voluminous. The author believes the classification of Flexner to be the best, viz., primary, exogenous, and endogenous.

Primary peritonitis occurs as a result of an infectious focus elsewhere in the body, the infecting organism being brought by the blood or lymph stream to the peritoneum.

Exogenous peritonitis occurs as a result of wound infection, gunshot, abortion with septic instruments, etc., and as a sequence to laparotomy.

Endogenous peritonitis occurs as a result of an organism coming from foci in relation to the peritoneal cavity, the most common being various affections of the appendix. Further division is made into sure and mixed types.

In these studies various organisms were found in symbiasis, such as colon bacillus with bacillus pyocyaneus. The colon bacillus was found 183 times in 342 cases, commonly with other infections, but it may occur alone, and is seldom if ever a blood infection, thereby not giving rise to a primary peritonitis. Staphylococci were found 108 times in 270 cases. The pneumococcus in primary peritonitis is shown to be relatively of great importance. The bacillus mucosus is also shown to be an important factor.

The majority of cases of peritonitis are endogenous, and are due to a combination of colon bacilli and others, usually staphylococci and streptococci, the appendix usually being the seat of the original focus, the female organs of generation being next in importance. Some observers have pointed out a close relation of anærobic organisms to appendicitis, and the author advocates making such determinations in all instances.

The gonococcus has not been demonstrated culturally in post-mortem peritoneal fluids, probably due to lack of proper development in cultivating methods or because no effort has been made. Primary peritonitis is more common than is ordinarily supposed.

In this report, 25 per cent of all cases are of the primary type and practically all cases showed a lowered resistance due to some chronic condition, as cirrhosis of the liver, tonsillitis, marasmus, etc. It would seem that the word "idiopathic" could be entirely dispensed with in regard to peritonitis.

H. A. POTTS.

**Lecene: Prophylaxis of Peritoneal Infections in Gynecological Operations** (Prophylaxie de l'infection péritonéale opératoire en gynécologie). *Ann. d. Gyn. e. d'Obst.*, 1912, ix, 513.

By Journal de Chirurgie.

Bacteriologically and theoretically, operative infections of the peritoneum have two different origins: they may be exogenous, coming from the atmosphere, from the surgeon, from his assistants, from the instruments, the suture material, the compresses; they may be endogenous, coming from the patient herself — for instance, insufficient disinfection of the skin or of the vagina — or the infection may be caused from the opening of a septic cavity. Absolute asepsis cannot be obtained. The wound is always exposed to atmospheric contamination. This minimum unavoidable contamination is not of practical importance, because the living organism is provided with natural means of defense. These may be exalted.



(a) Fight against infection. (1) Exogenous infection. Atmospheric infection is unavoidable. It can be lessened by spraying operating rooms, previous to operations, with oxygenated water or with steam vapor under pressure. Instruments, compresses, and suture material must be thoroughly sterilized. The most important progress recently made is the use of sterilized caoutchouc rubber gloves. They are a safeguard against the always imperfectly sterilized hands of the surgeon. Before putting on the gloves, the hands should be surgically cleansed as thoroughly as possible. (2) Endogenous infection. The surest method of disinfecting the skin and vagina is by mopping the surface with tincture of iodine or iodated chloroform. There must be no preliminary washing. The application of a sterilized rubber varnish that is removed with benzine has not become popular in France. Hot air disinfection of the cervix uteri, its preliminary suture in sloughing fibroids, and closure of the vagina by means of right angle forceps, are all methods that are often indicated.

Accidental opening of the intestine necessitates suturing and mopping of the contaminated peritoneal surface. Antiseptics should not be used in the peritoneal cavity.

(b) How shall we preserve nature's local means of defense? It is important to keep intact the peritoneal endothelium, to remove all extravasated fluids, all necrotic tissue, and to isolate infected zones. To realize this, the patient should be placed in suitable posture (Trendelenburg), so that the surgeon may operate with ease. Use a large incision and good retractors and perform the operation under the control of sight; blind enucleation is dangerous. The abdominal cavity should be well protected and the field of operation should be limited. For protection, wet, warm compresses are preferable to dry. All antiseptic applications to the peritoneum are harmful and should be avoided. Rapid operating and the selection of that technique which is anatomically appropriate to the case at hand are important. By an appropriate anatomical operation, one will often avoid rupturing pus tubes.

Bleeding points should be ligated and large pedicles should be avoided. For hæmostasis of the bleeding surface, peritonization seems preferable to thermo-cauterization. Denuded surfaces and pedicles should be covered with peritoneum. This minimizes the tendency toward intestinal adhesions, post-operative occlusions, and secondary sero-bloody oozing, and keeps septic inoculation from spreading to the cellular tissue. Subperitoneal cellular tissue is less active than the peritoneum in its defense against infection. Drainage is not always necessary.

In the absence of septic inoculation, the peritoneal cavity should be closed without drainage (cysts of the ovary, simple fibromyomata, non-ruptured gestation). The presence of an ascitic or bloody effusion, incompletely removed, is not an indication for drainage, as the drains are quickly surrounded

with adhesions and they no longer drain the peritoneal cavity. They serve only to guide outward secretions coming from a limited area of the peritoneum and to extraperitonealize the drained region.

In the decortication of tumors where hæmostasis is often insufficient, it was customary for a time to tampon with Miculicz' drain. Now, as a matter of fact, the custom is to peritonize as much as possible denuded areas and to drain with a rubber tube.

Drainage is needless for a simple vaginal section, for an intestinal rupture which has been carefully sutured. It is indispensable in pus collections, in sloughing, and in infected fibroids.

How shall we drain? The hollow cylindrical (rubber or metal) drain does well for liquids, but poorly or insufficiently isolates the portion of the peritoneum drained. Gauze drains liquids poorly, but isolates well that portion of the peritoneal cavity with which it is in contact.

Abdominal drainage is more aseptic but its aseptis is of short duration. At the end of three or four days skin microbes infect the channels. It has the disadvantage of not being dependent. It does not permit complete exclusion at the point of drainage. It predisposes to eventration if kept up for a few days.

Vaginal drainage has the disadvantage that it leads into a cavity the permanent aseptis of which cannot be assured. It is dependent. When associated with transverse walling-off, it permits complete exclusion of the true pelvis. Whenever applicable, vaginal drainage should be used in preference to abdominal.

(c) Can we increase the resistance of the peritoneum to infection? Interesting experiments have been made in this connection, but nothing definite can be stated. The following methods have been used: Normal salt solution, heated horse serum, subcutaneous injections of sodium-nucleinate, intraperitoneal injections of camphorated oil, injections of pure oxygen, and ærothermotherapy. Each method has advantages and inconveniences. None has given constant results.

J. DUMONT.

**Arnaud: Intraperitoneal Injection of Oxygen in the Treatment of Acute Diffuse Peritonitis** (L'injection intrapéritonéale d'oxygène dans le traitement des péritonites diffuses aiguës). *Lyon Chir.*, 1912, viii, 411. By *Journal de Chirurgie*.

The method of intraperitoneal injection of oxygen was first thought of about 1910 by Thiviar, employed after him by Bainbridge, Mecker, and Rouffaut, and is now highly extolled by Weiss and Sencert, who owe to it a beautiful series of 21 grave cases of diffuse peritonitis of every form, out of which they secured 15 recoveries, or 73 per cent of success.

The three personal cases which Arnaud reports in this article also deserve to draw attention to a method which is very little employed and yet seems to be very useful. None of the three cases yields



an absolute demonstration of its value, since two of the cases ended with death and the third would probably have recovered, even without oxygen; but all the three cases put into plain evidence the favorable effect, local as well as general, which results from oxygenation of the peritoneum. There follows, therefore, a brief account of these cases.

1. A boy 14 years of age, 15 days previously had been operated for an abscess of the appendix; at the present there were signs of generalized peritonitis. Drainage of the large peritoneum was impossible, owing to the adhesions which connected the flexures of the small intestine. Therefore intraperitoneal injections of serum were made, and then injections of oxygen. The latter were repeated three times a day, about 30 liters of the gas being given at each injection (the injection being made very simply by attaching a simple gas bag to the drain). Improvement was evident. The patient passed gas and solid matter; the abdomen became supple; secretion through the drain became more copious; the wound took on a better aspect. But pulmonary symptoms supervened and the patient died at the end of eight days.

The autopsy, besides showing foci of suppurative bronchopneumonia and an unrecognized subdiaphragmatic abscess, which seems to have been the cause of death, also showed that the peritoneum presented no traces of inflammation and that the adhesions had completely disappeared under the influence of the oxygen.

2. A boy of 11 years had been operated for appendicitis associated with a pelvic abscess; his condition remained very disquieting after the intervention, and diffusion of peritonitis was to be feared. Injections of oxygen were made twice a day, as in the preceding case (50 liters per injection). At the end of 48 hours the general and local state was very satisfactory and the patient had a spontaneous and copious stool. The injections of oxygen were therefore discontinued. Convalescence followed after that without any further incident.

3. The third case was a woman 41 years of age. Septic peritonitis had followed a miscarriage; a colpotomy had brought only a little dull colored liquid, and had not in the least reduced the symptoms. The condition was very serious: pulse 140, temperature 39.50, the vomited matter greenish, the abdomen tympanitic, the nose and the extremities cold. A laparotomy was performed, which showed that the peritoneum contained only a few spoonfuls of liquid and that the flexures of the intestine were distended, violet colored, and completely paralyzed. An abdominovaginal drain was installed, also another drain which reached as far as the diaphragm. Then the abdomen was closed, without any further maneuvers. Through the drains a continuous current of oxygen was passed (600 liters during 36 hours). During that time an indisputable improvement was noted: the patient became warm again, the pulse remained strong, and respiration was easy; fluid was passed copiously

through the drains; repeated violent colic gave evidence of the returning contractility of the intestines, and the patient even passed a little gas and some liquid matter. At the end of 36 hours, however, she became weak and every hope seemed to be lost. The current of oxygen was interrupted; immediately cyanosis set in, the patient became cold again, and suffered collapse; two hours later she died.

Intraperitoneal injections of oxygen have both a general and a local effect. Considerable absorption of the gas by the serous membrane constitutes a veritable "intraperitoneal hæmatosis," which renders respiration easy, the pulse more regular, and relieves arterial tension. Perhaps the oxygen itself, thus infused into the blood, may destroy the microbes and neutralize their toxins.

Locally the oxygen acts less on the microbes themselves than on the tissues, the defensive powers of which it increases. It causes considerable serous exudation with resulting hyperleucocytosis, which purges the peritoneal cavity; it revives peristalsis of the intestines and counteracts the intestinal paralysis which is so dangerous in peritonitis; finally it checks the production of adhesions and even brings about the absorption of those which have already been formed.

As a chance means, and when the equipment is insufficient, we may employ intermittent insufflation of the gas by means of an ordinary gas bag attached to an abdominal drain. But it is altogether preferable, when possible, to employ continuous insufflation by means of an oxygen tank, equipped with a regulating device which limits the outflow of gas to about one liter per minute; a flask of warm water through which the gas is passed would warm the gas and eliminate any dust particles.

The employment of intraperitoneal injections of oxygen will, of course, not prevent recourse to other methods which are at present employed in the treatment of peritonitis, such as Fowler's position, rectal injections of serum, injections of camphorated oil, and so forth. All these methods mutually support each other, and the disease is so serious that one should not neglect any of them.

CH. LENORMANT.

**Floderus: Primary Mesenteric Gland Tuberculosis from the Surgical Viewpoint.** *Nord. med. Ark.*, 1912, xlv, 1. By Surg., Gynec. & Obst.

#### DEFINITION

Primary mesenteric gland tuberculosis, considered from the pathologist's standpoint, includes only those cases in which a thorough autopsy fails to reveal a primary tuberculous focus, healed or active, in the body. Clinically, all cases are included in which a careful anamnesis and physical examination fail to locate a primary focus. The surgeon considers every case primary in which no tuberculous lesions can be found in the area drained by the mesenteric glands. Secondary infection of the glands, which occurs with far greater frequency in consumptives after infection of the intestinal mucous membrane



by swallowed sputum, is not as important surgically, because the tuberculous process in other parts of the body dominates the clinical picture.

#### HISTORICAL

Ball, in 1775, first mentioned tuberculosis of the mesenteric glands as a part of "tabes meseraica." Baumès described the disease accurately in 1788. In the last century it has been described with great precision by French authors, and lately by Hémeri in 1901, Carrière in 1902, and Vautrin in 1909. In the English and American literature a considerable number of operated cases have been reported, especially by Fagge and Corner. Scattered case reports have appeared in the German literature. Brunner mentions 4 operated cases in 1907; Mächtle in 1908 collected 15 and Thiemann in 1910 added 11 cases. Floderus has written an exhaustive monograph on this subject, bringing together all the available cases (about 75) from the literature, and giving a detailed account of 18 personal cases, in which the diagnosis was confirmed by operation in 15, and radiographically in 3.

#### ETIOLOGY

In considering the pathogenesis of primary mesenteric gland tuberculosis it is necessary to discuss the etiology of primary intestinal tuberculosis. Recent autopsy statistics show that this is much more common than was hitherto thought. Among adults, von Hausemann found 25 cases in 8000 to 10,000 autopsies, i. e., 0.3 per cent. Lubarsch, in over 1000 autopsies, found 56 cases, or 5.1 per cent. In children, the percentages given by various pathologists range from .1 per cent to 5.1 per cent of all cases, and as high a figure as 25 per cent of all tuberculous cases. Investigations on children dying of acute non-tuberculous diseases, as carried out by Councilman, Baginsky, Mallory and Pearce, Wagener, and others, show a surprising percentage of cases with primary intestinal tuberculosis, varying from 0.5 per cent to 21.1 per cent. The great divergence shown by these figures is due to the difference in technique used and the care and exactness with which the histopathological examination was carried out, as well as to social and geographic conditions.

The statistics on primary mesenteric gland tuberculosis are less accessible. Hof, in a series of 12,336 cases, of which one third were children and two thirds adults, with 3630 tuberculous cases included, found 126 cases (about 1 per cent) of primary tuberculosis of the mesenteric glands. Other authors give larger figures. In general, the statistics show that the intestines are primarily involved about three times as often as the mesenteric glands. Clinically, about 100 cases have been reported. In children, certainly tuberculosis is the most important affection of the mesentery.

Infection usually occurs by way of the alimentary tract. Whether hæmatogenous infection can occur is a debated question. Dobroklonsky, in 1890, and others proved that the tubercle bacillus can infect

the mesenteric glands without leaving any trace of its passage through the normal intestinal mucosa. The presence of virulent tubercle bacilli in mesenteric glands has been demonstrated by animal inoculations where microscopic examination failed to show any organisms. MacFadyen and MacConkey examined the mesenteric glands in 28 children. Among 8 of these who had clinical signs of tuberculosis, 5 showed virulent tubercle bacilli in the glands after inoculation. Of the 20 who showed no clinical or gross pathologic signs of tuberculosis, at least 5 were shown to contain virulent organisms in the mesenteric glands. Apparently healthy glands, therefore, may contain virulent tubercle bacilli. In fact the bacilli have been known to retain their virulence for as long a period as thirty years in a latent focus in a lymph gland.

The exact origin of the tubercle bacilli which penetrate the human intestinal tract is still being debated. The two opposing views of aerogenous versus alimentary infection, as upheld by von Behring and Koch respectively, acquired a new aspect when Koch announced the duality of human and bovine tuberculosis in 1901. Subsequent investigations showed that the human type of tuberculosis is common, not only in pulmonary affections but in affections of other organs as well. Some evidence has been brought forward to show the bovine origin of primary intestinal tuberculosis. Salmon has shown that the mortality from this disease is greater in Great Britain than in the United States, and thinks this is due to more effective legislation regarding milk sterilization in the United States. Hohlfeld has reported 30 cases of intestinal infection shown by inoculation to be of bovine origin. Dunne reports an epidemic of bovine origin in 4 children fed on the milk of tuberculous cows. On the other hand, Gaffky and Rothe, in the Institute for Infectious Diseases in Berlin, investigated 400 necropsies in children, and showed that the type of tubercle bacillus found in the mesenteric and bronchial glands in 78 cases was unquestionably of the human type in 75. The prevalence of tuberculosis in Japan, where cow's milk is not used in the nutrition of children and where most cows are immune from the bovine bacillus, is of great significance. Kitasato found a mortality of 7.6 per cent from tuberculosis in over 1,840,000 deaths in the years 1899 to 1900. Among these there were not less than 16,842 cases of primary intestinal affection. It seems probable, therefore, that the food products of diseased animals (milk, butter, etc.), and the bacilli excreted by human beings play an equivalent rôle in the pathogenesis of intestinal and mesenteric tuberculosis. Heredity plays no rôle in the latter. Both sexes are equally affected. The disease usually manifests itself in the first two decades of life, less often in the following three decades. The average age of onset is about 15 years. Trauma seems to be an exciting cause. Acute infections during childhood, such as measles, typhoid, pertussis, etc., and particularly acute



infections of the ileo-cæcal region, i.e., appendicitis, are frequently exciting causes.

#### PATHOLOGY

Anatomically, the mesenteric glands correspond to other tuberculous glands but show a greater tendency toward calcification. The tuberculous process spreads in a centripetal direction. Those glands in closest proximity to the intestine are first affected. Occasionally retrograde lymphogenous infection can occur. The glands grow excentrically, forming hard, pedunculated tumors. The localization is variable. They seldom are found in the cephalad or caudad segments of the intestinal canal. Their site of predilection is the mesentery of the ileum and ileo-cæcum. Floderus found the ileo-cæcal glands affected in 12 of his cases. Infection extends along the glands of the ileo-colic vessels toward the root of the mesentery. In a few cases the retroperitoneal glands were primarily involved. Rarely the glands in the transverse mesocolon and the mesocolon ascendens become affected. Mesenteric lymphomata are a source of danger, as they may involve neighboring vital organs, such as the intestines, bile tracts, and the larger abdominal vessels. As a result of fibrous mesenteritis and adhesions, the intestinal walls are compressed and partial stenosis occurs. The glands may and frequently do suppurate and rupture their capsule. The abscess may spread between the serous layers of the mesentery into the retroperitoneal tissue, or it may perforate into the peritoneal cavity. The outer layers of the intestine may ulcerate as a result of a suppurative perilymphadenitis. Rarely the large abdominal vessels become eroded.

#### SYMPTOMATOLOGY

The symptom-complex of primary mesenteric gland tuberculosis is not characteristic. The onset is insidious and preceded by a latent period of variable length. In many cases the disease remains latent throughout and is not diagnosed clinically. Among the initial symptoms may be mentioned abdominal pain, malaise, anorexia, loss of strength, and emaciation. In some cases subjective symptoms are absent, and the accidental finding of an abdominal tumor leads to diagnosis. Abdominal pain is the most constant symptom, and occurs in three fourths of the cases. It may be continuous, intermittent, or a periodic griping pain. In children it is difficult to interpret. It frequently simulates appendicitis. When severe at the onset it may indicate grave complications, such as ileus or perforative peritonitis. The pain is usually localized in the umbilical and cæcal regions. It is not affected by posture. Nausea may accompany it, and vomiting frequently occurs. Prognostically, vomiting is an unfavorable sign, as it may indicate the onset of ileus or peritonitis.

The most pathognomic symptom is the presence of a tumor mass. In advanced cases a large lymphomatous tumor may be present, with a high degree

of emaciation. Sooner or later in the course of the disease, the motor power of the intestines is affected. Constipation may be progressive and lead to partial obstruction of the intestines. The ileus phenomena are due either to mechanical compression of the gut by the tumor mass or to fibrous and suppurative mesenteritis, with formation of intraperitoneal synechiæ. Necrosis of the compressed portion of the intestine has been known to cause perforation and peritonitis. In some cases diarrhœa is present, and may alternate with constipation. Persistent diarrhœa which does not yield to medical treatment leads to the suspicion of a primary intestinal focus. Still it has been shown in many cases with a history of diarrhœa, in which part of the intestine was removed together with the mesenteric glands, that the intestine showed no signs of tuberculosis. The intestinal symptoms frequently disappear after removal of the mesenteric lymphomata. The diarrhœa may be due to a septic enterocolitis in some cases. Blood and mucus have been frequently observed in the stools. The blood has disappeared in some cases after operation and is probably due to stasis in the mesenteric veins. Bloody stools do not necessarily point to ulceration of the intestine.

Fever occurs in practically all cases at some stage in the development of the disease. Afebrile cases have been reported, but if the observations are carried over a sufficient period some rise of temperature will eventually be observed. Floderus observed a rise of temperature to 39° and 39.8° C. in nearly every one of his cases, even with subfebrile periods. High temperatures indicate suppuration, peritonitis, or the onset of a miliary tuberculosis. Corner has reported a case with extensive suppuration with afebrile periods. In a case in which Grüneberg removed a liter of pus from the abdomen, the temperature was normal.

The commonest complication is peritonitis. This is either of the fibrous or exudative type. When the glands suppurate, the pus may rupture into the peritoneal cavity. Tuberculous peritonitis occurs by direct extension or by rupture of a gravitating tuberculous abscess. In two cases reported by Floderus, the clinical picture was that of a tuberculous peritonitis and the suppuration of the glands was discovered at the operation. Icterus is an uncommon complication, and may be due to compression of the ductus choledochus by a large tumor. Hæmorrhage from erosion of a large mesenteric vessel has been observed in two cases. Ileus as a complication, or rather a natural sequel of the disease, has already been mentioned. Tuberculosis in other organs, as the cervical glands, lungs, pleura, etc., is not a common observation in the cases reported in the literature. Branson and Carrière claim that the mesenteric glands next to the bronchial glands are the most important source of miliary tuberculosis.

#### DIAGNOSIS

The most positive finding on which to base a diagnosis of mesenteric gland tuberculosis is a tumor



mass. Inspection of the abdomen may reveal a circumscribed swelling. Visible peristaltic waves are seen when there is obstruction. Combined palpation per rectum under narcosis is the only sure method of demonstrating the abdominal lymphomata. The tumor is usually single, occasionally multiple. It varies in size from a hazel nut to a cocoanut. Larger tumors, composed of several lymphomata, have an irregular, nodular feel. The consistence is hard and elastic. Fluctuation is rarely present. The tumor is usually freely movable, and moves with respiration also. Immobility of the mass indicates extensive adhesions to surrounding organs. Sensitiveness to pressure is a common but not a constant phenomenon. A high degree of tenderness speaks for suppuration, although the absence of tenderness does not exclude suppuration. The percussion note over the tumor is not altered as a rule. Free fluid can sometimes be demonstrated, and points to complications.

Radiographic examination is of great value in the diagnosis. Many cases in which the X-rays showed a shadow in the ileo-cæcal region have been wrongly interpreted as calculi in the kidney or ureter. Floderus has shown the presence of calcified mesenteric glands in 5 cases by this method. It has its greatest value in chronic cases in which the local symptoms are masked. Serological examination by von Priquet's method is not of great value in this disease, according to Floderus.

#### DIFFERENTIAL DIAGNOSIS

Little attention has heretofore been paid to the diagnosis of mesenteric gland tuberculosis. Among all the cases reported in the literature, only 7 were diagnosed before operation. Of 12 cases in which Floderus made a positive diagnosis, 7 were confirmed by operation and 3 by the X-ray. Kukula diagnosed his case as a solid tumor of the mesentery. Bier as a retroperitoneal tumor. Marchant, Vautrin and Routier mistook their cases for ileo-cæcal tuberculosis. In several cases tuberculous peritonitis was suspected. In fact, the differentiation of these 3 conditions is very difficult. Ileo-cæcal tuberculosis affects adults chiefly. Primary mesenteric tuberculosis is twice as common in children, according to Floderus. In circumscribed tuberculous peritonitis there is a fixed mass in the abdomen. An intraperitoneal exudate speaks for a tuberculous peritonitis. In some cases with suppurating retrocæcal lymphomata, the tumor may become fixed also. In many cases an absolute diagnosis is impossible without operation.

Tuberculous glands in the ileo-cæcal region have been frequently confused with appendicitis. The pain is, as a rule, weaker in tuberculosis, the onset is less stormy, the fever is not so high at the onset, and muscular rigidity is less pronounced. When ileus or peritonitis occurs, the diagnosis has been invagination, or volvulus in some cases, or an indefinite diagnosis of peritonitis. Abdominal tumors of all kinds must be differentiated. Kidney tumors,

nephrolithiasis, floating kidney, echinococcus cysts, etc., come into question. Fæcal masses can be excluded by giving a laxative. Periodic fevers of various sorts, especially typhoid, must be excluded. Floderus thinks that tuberculous glands, next to chronic infections of the tonsils and adenoids, are the commonest source of the indefinite periodic fever so common in childhood. In just these cases the X-rays and subcutaneous tuberculin injections are of great value in the diagnosis.

#### PROGNOSIS

The majority of cases of primary mesenteric gland tuberculosis are latent, and therefore benign. The minority offer an unfavorable prognosis. Exitus is brought about by peritonitis, miliary tuberculosis, or marasmus. A few cases of post-operative death are recorded.

#### THERAPY

After the diagnosis is made, treatment is primarily medical, provided there are no immediate indications for surgical treatment. Prophylaxis is important. All sources of further tuberculous infection from questionable food products or from human sources should be eliminated. The patient is instructed to wear a firm abdominal binder. Abdominal traumata and violent exercise must be avoided. At the first sign of appendiceal involvement, laparotomy should be performed and the appendix and the affected glands removed. Post-operative treatment includes absolute rest in bed for one to two months at least. Exercise is to be carefully avoided at all times after the operation. X-ray therapy is worthy a trial. Floderus has employed it in two cases. In one, after 22 exposures, the patient's condition improved and the temperature dropped. The second was an advanced case with retroperitoneal lymphomata, and was not improved. The X-rays should be tried where operation is contraindicated or refused.

The first radical operation for primary mesenteric gland tuberculosis was performed by Czerny in 1887. This case was accurately diagnosed before the operation. The patient died of septic peritonitis. The first successful radical operation was done by Bier in 1890. Kukula, in 1896, first resected the intestine in this disease. On reviewing the histories of the cases operated upon, it was found that the duration of the disease prior to operation was a short one. Seventeen cases of about 50 showed symptoms for a month or less. Twelve presented marked symptoms for two weeks. In 9 cases the disease had existed eight to ten years or more.

The technique of the operation has been well worked out. The incision naturally depends on the position of the tumor. The median incision must be considered as the normal one. It gives easy access to the mesentery and gives sufficient space for extirpating the commonest, i. e. the ileo-cæcal, lymphomata, and if necessary the segment of gut drained by them. Some operators prefer a right-sided incision, as in appendicitis. After entering the peritoneal cavity all the groups of glands in the



mesentery should be carefully palpated, as small glands next to the intestine are easily overlooked, especially in fat individuals with considerable omental fat.

The ileo-cæcal region, and the mesentery supplying the terminal two feet of the ileus should be given special attention. Old calcified glands are frequently the guide to the location of the active process. The lymphomata are best removed by blunt dissection in order to prevent severe hæmorrhage from the frail mesenteric vessels. The serosa overlying the lymphoma is incised, the gland is shelled out by keeping close to its capsule, and the serosa is closed with heavy catgut sutures. Careful hæmostasis is essential to secure an uneventful post-operative course. Large, adherent pockets of glands should not be removed as a whole because there is danger of injuring the nutrient vessels to the intestine. If the tumor involves a large part of the mesentery, and resection is unavoidable, the mass may be removed in toto. Where extensive adhesions to retroperitoneal structures are present, the tumor is best removed in pieces. The more thorough the removal of the glands, the more rapid is convalescence. Even incomplete removal gives good results, as Floderus has shown. It is perfectly safe to leave in place some of the smaller outlying lymphomata, when the glands are distributed over a large area. Pus cavities should be freely exposed and their contents wiped out. The abscess wall need not be extirpated. If desired, a tampon can be left in the abscess cavity for a few days, but as a rule drainage is to be avoided.

Among complications occurring during the operation may be mentioned the bursting of the softened glands, with infection of the peritoneum or abdominal wall. Even after this accident, an undisturbed recovery may be secured if the pus is wiped out and the peritoneum closed over the cavity (Corner, Mächtle). Bier's case was complicated by an abscess of the abdominal wall. Vautrin's case had a regional recurrence. Grüneberg's case and Czerny's case died of peritonitis. Rupture of the intestine, owing to adherent masses of glands and accidental opening into the intestine, are reported by Baum, Stark, and Floderus. Dangerous hæmorrhage has occurred in several cases. These complications show the necessity of walling off the operative field with gauze packings before extirpating the lymphomata.

Enucleation without resection of the intestine should therefore be regarded as the normal operation. Forty cases have been reported in the literature. Floderus has had an experience of 7 cases. In a number of these, total removal of the glands could not be done because of their extensive distribution. In one third of these cases, appendectomy was done simultaneously. In one case a gastro-enterostomy was performed. Eight cases of the total number ran an unfavorable course. One died of post-operative hæmorrhage from a mesenteric vein.

In 5 cases sepsis, i. e. peritonitis, was the cause of

death. In 2 of these the peritonitis existed before the operation. In 2 cases miliary tuberculosis developed. In another 2 cases Floderus found it necessary to perform an enterostomy because of ileus symptoms three days after the enucleation. Both of these cases resulted fatally. In the majority of the cases the end results could not be accurately foretold, because the cases were observed for only a year or more. Among later post-operative complications Floderus noted an acute exudative peritonitis two weeks after the operation, which he thought was due to rupture of one of the peritoneal sutures, with infection by tubercle bacilli. In another case of Floderus, free fluid was present three weeks after the operation. Both cases recovered. Intestinal disturbances are rather frequent during convalescence. Some resistance at the site of the tumor remains for a variable period. Some recurrences are rare. Vautrin describes a recurrence seven months after the first operation. Floderus records a recurrence after two and one half years, necessitating extensive resection of the ileo-cæcum and ileum, with recovery.

Eight cases of resection of the intestine are reported (Baum, Brunner, Kukula, Mächtle, Michaux, Sherman, Thiemann, and Vautrin). Floderus has performed resection plus enucleation five times, without any mortality. Usually the peripheral part of the ileum or the ileo-cæcum was removed. Baum removed part of the jejunum. The length of the resected piece of gut varied from 8 to 237 centimeters. One case died of a pre-existing peritonitis. The remainder ran a favorable course, although the period of observation was too short to determine the final result. Kukula's case showed a recurrence three years later in the form of a large abscess. Thiemann confined himself to incision of the softened glands at the root of the mesentery. The indications for resection of the intestine were the presence of extensive adhesions, infiltration of the mesenteric vessels, larger tumor masses encircling the bowel, necrosis of the bowel wall from compression, or accidental rupture of the bowel during the operation. An end-to-end or a lateral anastomosis was done in each case.

A simple exploratory laparotomy is said to give as good results in mesenteric gland tuberculosis as in tuberculous peritonitis. Buscarlet, Vautrin, and F. Greves have reported favorable results. The number of reported cases and the clinical accounts of the same are too meagre to show any definite conclusions.

Enterostomy may be necessary if there is a diffuse peritonitis with paresis of the bowel wall, as described by Thiemann. Floderus and Beale were forced to make a secondary enterostomy because of ileus symptoms. Gastro-enterostomy was performed by Floderus in a case in which the duodenum was compressed by the tumor. A second attempt at choledocho-enterostomy by another surgeon one and one half months later, to relieve the cholemia, resulted fatally from hæmorrhage.



From his experience, Floderus concludes that the end results of radical operation are in the main satisfactory. Of the 16 cases operated upon by him, 11 were well at the time of writing. The mortality was high only in advanced cases, with complications such as ileus and peritonitis. If the diagnosis is made early, operation should not be delayed till threatening symptoms come on. If a large tumor is present, or progressive emaciation, severe abdominal pain, or repeated attacks of fever develop, the indications are present for operative interference. Ileus and peritonitis, of course, call for immediate operation. Pulmonary tuberculosis is not a contraindication in the early stages.

Floderus concludes his article by giving the case histories of over 70 cases reported in the literature, and a detailed account of 18 personal cases.

ERWIN P. ZEISLER.

**McGrath: Intestinal Diverticula; Their Etiology and Pathogenesis, with a Review of 27 Cases.** *Surg., Gynec. & Obst.*, 1912, xv, 429.

By Surg., Gynec. & Obst.

Diverticula occur in every division of the digestive tract, from the beginning of the œsophagus to the end of the rectum, including the vermiform appendix. They are most commonly present in the large intestine, usually in the descending portion, are generally multiple, of the false type, and frequently are associated with the appendices epiploicæ. Several etiologic factors are concerned in their formation, namely: decreased resistance of the intestinal wall; increased pressure from within the bowel; the passage of a structure through the wall, forming a *locus minoris resistentiæ*, along which the protrusion makes its course. In the small intestine they rarely undergo pathologic changes which are sufficient to produce symptoms. In the large bowel the diverticula are the source of pathologic processes which, in some cases, are most grave. Masses arising from diverticular infections may clinically simulate malignant tumors, and the process may result in malignancy. In a series of 27 cases, 25.9 per cent were malignant. This percentage is to be applied only to diverticula resulting in marked pathologic changes, and *not* to the occurrence of diverticula in general. The most common initial change following infection through intestinal diverticula is a chronic extramucosal inflammation—peridiverticulitis. This fact is of essential importance to the clinician in seeking symptoms during the early stages of the condition. In 26 specimens presenting peridiverticulitis, in but 5 was the mucous membrane of the diverticula extensively involved; in 19 its inflammation varied from mild to a moderate degree, and in 2 it appeared intact.

Of prognostic importance is the fact that in this series of 27 cases all presented tumefaction of the large intestine and all occurred in the so-called cancerous period of life, yet 74.1 per cent of them

proved to be only inflammatory. The complications and sequelæ of these infections are manifold. Among these are ulceration, perforation, adhesions, abscess formation, fistulous communications quite commonly with the bladder, peritonitis, etc. The complexity of the resultant pathologic processes has given rise to numerous diagnoses. The condition has been mistaken for carcinoma of the large bowel. Affections of the gall-bladder, liver, pancreas, and duodenum, appendicitis, pelvic peritonitis, ovarian tumor, etc. The necessity of early diagnosis and adequate treatment is obvious in the light of the possible complications, with the hazardous operative risks and the percentage of malignancy which has been noted. A knowledge of the occurrence of intestinal diverticula, the location in which infection through them produces serious trouble, the age at which they most frequently occur, together with a consideration of the course of the pathologic process resulting from infection through these pouches, should result in more and earlier diagnoses and an increasing success in treatment.

**Bienvenu: Diverticulitis and Diverticular Occlusion of the Intestines** (*Diverticulites et occlusion intestinale diverticulaire*). *Thèse de Paris*, 1912.

By Journal de Chirurgie.

This work is a compilation of studies relating to the above subject; the author reports eight additional unpublished cases.

Meckel's diverticulum, which is found in children with a frequency of 1 in 60 or 1 in 100, is very often the cause of early pathological conditions, of which intestinal occlusion is by far the most frequent. This may be produced mechanically (volvulus, invagination, or strangulation) or by inflammation (the result of an old diverticulitis).

Diverticulitis may be plastic or suppurative. In the latter case the general picture of peritonitis may be present, so that the disease deserves to be likened to appendicitis. The author describes two phases of inflammatory occlusion—the first, pseudo-appendicular; the second, occlusion. Beyond this the symptomatology of diverticulitis is ill-defined. We may assume this condition to be present when periumbilical pains are present, when there is marked swelling in the umbilical region with an associated low temperature and quickened pulse; the abdomen for a long time remains supple and only later becomes slightly rigid and tympanitic. The co-existence of another malformation, in particular a tumor or a fistula of the umbilicus, should be taken into consideration in making a diagnosis.

The treatment of occlusion due to diverticulum will vary with the case; as, simple resection of the diverticulum, resection of intestinal flexures, and the formation of artificial anus. Whenever in the course of any operation the presence of a diverticulum is discovered, it should in every case be removed. If an operation, following abdominal complaints, should prove the appendix to be in a healthy condi-



tion, it will be well to examine the last few centimeters of the ileum to look for a persistent diverticulum, which may be the cause of the complaints.

J. L. ROUX-BERGER.

**Pakowski: Dermoid Cysts of the Mesentery** (*Les kystes dermoïdes du mésentère*). *Arch. gén. d. Chir.*, 1912, vi, 1029. By Journal de Chirurgie.

Forty-three cases have been collected from the literature. They were located as follows: 7 in the omentum, 1 in the small omentum, 3 in the lesser peritoneal cavity, 1 in the mesocæcum, 2 in the ascending mesocolon, 5 in the transverse mesocolon, 1 in the descending mesocolon, 3 in the mesosigmoid, 8 in the neighborhood of the rectum, and 12 in the retroperitoneal space. These cysts are commoner in youth, and more frequent in females (20 out of 31). The cyst contents are sebaceous matter—hairs, teeth, nails—and in a compound cyst, bones, cartilage, and muscular and nervous tissue.

The symptoms of dermoid cysts are those of all cysts of the mesentery. For a long period the cyst may remain latent, then later there appears indefinite, vague functional disturbances and an abdominal tumor is detected. At times the onset is more dramatic: acute abdominal pain, simulating peritonitis or intestinal occlusion. When the tumor is fully developed, we see either a symmetrical or an asymmetrical swelling bulging the abdominal wall more or less, according to the volume and location. Palpation gives a rounded, globular, regular or lobulated, distended or elastic, and at times a fluctuating, mass.

The cysts are usually mobile. Immobility suggests complications. The cyst has spontaneous mobility—it moves with the position of the patient and with respiration. Percussion may give a dull note, at times modified or concealed by overlying loops of gut. The functional symptoms are few. At times there is pain, meteorism and constipation. The most frequent complications are intestinal occlusion, torsion, and suppuration of the cyst.

The diagnosis is in practice very difficult. One must exclude tumors of the great omentum, of the gall-bladder, of the sigmoid colon, of the transverse colon, of the spleen, of the female internal genitalia. If the diagnosis of cyst is made, one may hesitate as to the location of the cyst and confuse a mesenteric with a pancreatic cyst, a retroperitoneal cyst, a movable kidney, complicated by hydronephrosis. At times the X-rays may assist; for instance, the radiogram may reveal the presence of bones, of teeth.

Several surgical methods have been suggested for the treatment of these cases: simple aspiration (a blind and unsafe procedure), or marsupialization, which is simple of execution but leaves a fistula slow to heal. The method of choice is extirpation. Thirteen cases treated by extirpation gave 11 rapid recoveries.

If a cyst is pediculated, adhesions are separated, the pedicle carefully ligated, then divided. If the cyst is intramesenteric, one divides the overlying mesenteric layer by making an incision parallel to the vessels, as much as possible in an avascular zone and as far as possible from the intestinal border. The cyst is enucleated with or without preliminary evacuation of its contents.

J. DUMONT.

#### GASTRO-INTESTINAL TRACT

**Schutz: Gastric and Duodenal Ulcer.** *Wien. klin. Wchnschr.*, 1912, xli. By Surg., Gynec. & Obst.

Schutz examined a great many cases of gastric and duodenal ulcer, in his clinic in Vienna. He reviews the present conceptions of these diseases. Payr's experimental results of producing ulcers by formalin injections in animals cannot be regarded as of etiologic significance in the human. Of more interest is Schmidt's and Heyrovsky's discovery that islands of pavement epithelium in some stomachs, when damaged by the hydrochloric acid, resist less than the normal lining and thus ulcers are formed. Hypersecretion, formerly regarded as a neurosis, is seen by him more frequently as a symptom of gastric ulcer. Pain may be pathognomonic, particularly the localized pain; and herein he agrees with most observers. Occult blood is more characteristic for carcinoma than plain ulcer. The Röntgen diagnosis, particularly the Haudeck symptom of a small bubble-like appendix to the regular shadow, is of great value.

Gastro-enterostomy is his choice, but he says some words in praise of von Eiselsberg's method of pyloric exclusion. In regard to duodenal ulcer, Schutz confesses less experience, and points to the progress of English and American surgeons. CARL BECK.

**Ransohoff: The Operative Treatment of Gastro-Enteroptosis.** *Boston M. & S. J.*, 1912, (lxvii), 347. By Surg., Gynec. & Obst.

The author calls attention to the overshadowing feature of some congenital variation from the normal embryonic process of parietal fixation of the intestinal tube in the causation of gastro-enteroptosis. He believes the most important of these to be the insufficient fixation of the cæcum and lower part of the ascending colon. The fact that a mobile cæcum is often found without symptoms, the author considers of no value. In the cæcum bacterial activity reaches its climax, and in the event of inadequate or delayed drainage the symptoms of autointoxication become pronounced, and neurasthenia in some of its many forms crowns the process. It is so often here that the Jackson membrane is found, which the writer believes to be the result of a low form of long standing infection. These cases as a rule show the history of constipation from childhood.

In easy appendix operations where the cæcum is mobile and dilated, the author fixes the cæcum by one or two lateral sutures after reducing it in size by cæcoplication.



For prolapse of the midcolon the author performs colopexy after a modified Coffey fixation. To insure a lasting result, the perineum of the anterior abdominal wall is divided along the line of proposed fixation and the fascia exposed from within. Into these denuded spaces the omentum is fixed by interrupted or continuous sutures.

The cause of coloptosis, the author believes to be the high and firm fixation of the splenic flexure, when a valve-like constriction separates the nearly always full part of the proximal end from the empty distal segment. The latter is in reality intended only for the passage of the fæces. The author often supplements the colopexy with reefing of the mesocolon. He does not believe that exclusion operations, particularly that of Lane, are indicated save in extreme cases.

In regard to gastropptosis, the author believes that its importance has lately been lost sight of by reason of the extensive cultivation now practiced in the field of coloptosis. He believes that in not a few cases a prolapsed stomach is etiologically more important than the sagging of the colon which may result from it.

For dilatation he resorts to gastroplication. The author does not believe that any gastropptotic patient should be operated on except for some actual functional disturbance, the relief of which must be the aim of the operation. In many seemingly hopeless cases of gastro-enteroptosis, with marked nervous symptoms, the operation promises relief. If this is the result of suggestion, it is none the less valuable if the relief is permanent.

**Rammstedt: Operative Treatment of Congenital Stenosis of the Pylorus.** *Med. Klin.*, 1912, viii, 1402.  
By Surg., Gynec. & Obst.

The author reports two cases of this type upon which he operated. He prefers splitting the pylorus without incision of the mucous membrane, followed either by transverse suture of the longitudinal incision, or, as he did with his second case, by no suture at all.

**CASE 1.** Male child, normal during first five weeks of life; after that, vomiting, frequent pains, constipation for two weeks, internal pain during that time, and for one week more in hospital. No improvement; constant loss of weight and vomiting. **Operation.** Incision 6 cm. long. Pylorus cartilaginous and as thick as the little finger, 2 cm. in length. It was difficult to bring pylorus out of the wound. Small intestine quite atrophic. Longitudinal splitting of pylorus with transverse suture. Recovery was retarded by frequent attacks of vomiting, which kept up for 10 days. After that, steady improvement.

**CASE 2.** Three children in this family had been affected with vomiting soon after birth. The first, a girl, recovered after five months and is now well. The second child, a boy, died after four months of vomiting. The third, also a boy, presented similar symptoms and died in convulsions at the age of four months. Autopsy showed a typical hypertrophic stenosis of the pylorus. The fourth

child, a boy, was normal for the first ten days after birth. From then on mixed feeding was administered, because of scarcity of mother's milk. This change of food was followed by vomiting, scant stools, and decrease in weight. Twelve days later operation was performed. The pylorus showed the same changes as in Case 1. The stenosis was incised. The incision gaped strongly; the mucous membrane presented 1-2 mm. in width, but did not bulge. The pyloric incision was left open. Recovery uneventful; no further vomiting.

Discussion of the various operative procedures employed so far in the treatment of pyloric stenosis follows: (1) Jejunostomy was employed by Cordua, with fatal results. (2) Pyloric resection was performed, with death following. The great tension upon the duodenum makes delivery almost impossible. (3) Divulsion is the operation of choice, according to Loreta. It is a brutal maneuver, which is not surgical. (4) Gastro-enterostomy is followed by a mortality of 49 per cent in 135 cases, as collected by Scudder. Scudder's success in eight consecutive cases of posterior gastro-enterostomy without a fatality makes it evident that the skill of the individual operator plays an important part. (5) Pyloroplasty: in 1908, 21 cases were collected with a mortality of 57 per cent. A small incision is sufficient. Failures are due probably to plication of the mucous membrane after transverse suture. Transverse suture through the longitudinally incised muscle is difficult. Weber recommended partial pyloroplasty while leaving the mucous membrane intact. (6) A combined operation of pyloroplasty and divulsion was devised by Nicoll. A V-shaped incision was made in the transverse axis of the pylorus, and this was sutured in a Y form, after divulsion, through a small incision in the stomach. The mucous membrane was left intact. Six cases were reported, with five recoveries. Rammstedt enumerates the objections which may be made against the method practiced in Case 2. Fear of possible gangrene of the exposed mucous membrane is unfounded. The exposed portion of mucous membrane is too small. Omentoplasty might be done to protect against possible perforation. He does not think recurrence possible by a reunion of the cut edges. The defect probably will be filled by connective tissue. After treatment is of great importance, as the small intestine is usually atrophic and not accustomed to large amounts of food. Feeding must be done under expert direction, as otherwise the good results of the operation might be frustrated.

E. C. RIEBEL.

**Gouilloud: Some Cases of Pylorotomy with Resection of the Transverse Colon** (Quelques cas de pylorotomie avec résection du colon transverse). 26th Cong. de l' Ass. fran. de Chir., Paris, Oct. 9, 1912.  
By Journal de Chirurgie.

Gouilloud presents five patients in whom it had been necessary to resect simultaneously a portion of the stomach and of the transverse colon.



The first, a woman of 35 years, had a tumor of 10 kg. (900 gr.). The tumor (a leiomyoma or myosarcoma) had its point of origin in the muscular layer of the fundus. The spleen was located upon the lateral face of the tumor, and was removed with it. The patient suffered neither from shock nor from peritonitis; but she had fever, which was attributed to the slipping of an intestinal forceps and the escape of stomach mucus over the field of operation. On the eighth day pneumonia appeared, to which the patient succumbed.

The second patient, also 35 years old, was a woman affected with an encephaloid cancer of the greater curvature, which had invaded the gastroduodenal mesentery but remained movable. She was doing well ten months after.

The third, a woman 62 years of age, was operated for a bulky tumor which was recognized to be of an inflammatory nature. It was formed of a thick shell, enclosing a sanious cavity which communicated with the gastric cavity by means of a perforated ulcer. The patient was doing well 15 months after.

The other two cases were colectomies for cancer of the colon adhering to the prepyloric region.

One of them, operated the first time by colectomy, returned with a movable and operable recurrence. The patient was getting along well three years after the first operation and nine months after the second.

The other patient was operated for a cancer of the transverse colon, which adhered to the stomach. The trouble has not recurred for more than ten years.

In conclusion resection of a portion of the transverse colon but very slightly aggravates the mortality of a pylorectomy.

These complex operations should not be considered futile attempts; they may be followed by lasting results.

The anatomical relations of these two viscera explain the readiness with which they are invaded in common.

Neoplastic involvement is also likely where the middle portion of the colon adheres and occlusion is to be feared, so that the adhering organ must be resected.

It is best to determine, before attempting any removal, the extent of the involvement, and if the colon is implicated, to resect en bloc the area of which the tumor forms the center.

#### Blad: Chronic Duodenal Ulcer and Its Operative Treatment. *Arch. f. klin. Chir.*, 1912, xcix, 413.

By Surg., Gynec. & Obst.

Report and analysis of 32 cases of chronic duodenal ulcers, from the clinic of Prof. Th. Rösing. The observation of the cases has been very exact, supplemented by laboratory and X-ray examinations. Blad pleads for a sharper distinction between duodenal and pyloric ulcer. The majority of duodenal ulcers is near the pylorus, but not infrequently ulcers are found lower down which may give rise to complicating affections of the biliary passages and

the pancreas. Contrary to the tendency of assuming appendicitis or gynecological affections as causes of duodenal and gastric ulcer, Blad emphasizes that the majority of patients observed had been entirely free from any disease before onset of ulcer symptoms. Examinations during operation were carried on with great precision, and in most cases augmented by gastro-duodenoscopy with Rösing's gastroscope. In quite a number of cases cicatricial changes of the wall of the duodenum did not correspond with the seat of the ulcer. The use of the pyloric vein as a landmark for the ulcer, as practiced by Moynihan and Mayo, has not been practiced. He confirms the presence of hunger pain (Moynihan) to be a highly suggestive symptom of duodenal ulcer. X-ray findings have changed the explanation of pain two or three hours after meals. The pylorus normally closes when acid gastric contents touch the duodenal wall, and remains closed until complete neutralization has taken place. In the beginning, when the gastric contents are slightly acid, neutralization is accomplished within a short time. During this phase, the pylorus generally relaxes and permits renewed passage of food, as confirmed by X-ray findings. Gradually, with increasing acidity of gastric contents, the normal reflex becomes more pronounced and the pylorus remains closed for a longer period. This is increased by the irritation of the ulcer by the acid contents. Continuous contractions of the pyloric end of the stomach take place to evacuate this, and these cause the pain. As long as the antrum contains anything these pains continue. Renewed taking of food or of alkalis neutralizes the acid, the pylorus relaxes, passage of gastric contents is possible, and the pain ceases. Nightly pains were caused in many cases by more or less pronounced motor insufficiency of the stomach. In a smaller number of cases, adhesions produced these pains. In over half the cases, the pain was on the right side, usually of the epigastrium and along the curvature; in some, complications of pain beneath the right scapula or in the lumbar region and right iliac region. One case showed marked influence of pain by posture. While standing, this was continuous, irrespective of food, and ceased on lying down. Operation revealed that the round ligament of the liver was broadly adherent to the convexity of the duodenum, due to an old local peritonitis; the ligament covered a perforated ulcer.

**Hæmorrhage.** Hæmatemesis or melæna occurred 14 times. In 4 cases, occult hæmorrhage was demonstrated by examination of the fæces. Blad advises to conduct these examinations during a time when bleeding is likely to occur, as after unusual exertions or after an error in diet. He finds antagonism between pain and hæmorrhage. In the latter cases there often is little or no pain. All ulcers causing marked hæmorrhage were found in the concavity of the duodenum. The most dangerous hæmorrhage often results from ulcers which show little or no inflammatory reaction. Icterus was present in two cases, explained by the location of



ulcer near the papilla. One case had a complicating cholecystitis. Clinical signs of pancreas affection were noted in two cases. Blad finds that glycosuria and decreased sugar toleration should remind one of the possibility of ulcer of the duodenum. Sensitiveness to pressure occurred in 15 cases, where it was right sided; some patients showed pronounced defense over the right rectus. Nine times tenderness on pressure was found over the gall-bladder region and twice along the left curvature. Examinations after test meal showed that absence of free hydrochloric acid may be associated with ulcer of the duodenum. Hypersecretion was found in about one half of the cases. Operation disclosed in 25 cases an open ulcer despite the long duration. Chronic perforation was discovered in 5 cases. In 2 cases the ulcer was not found during operation, but discovered later at the autopsy. Twenty-two cases were treated by anterior gastro-enterostomy, with subsequent entero-anastomosis, except two, owing to weakness of patients. Resection of various kinds was practiced nine times. In two cases, where the ulcer was so near the papilla that extirpation was not possible, the pylorus was resected and invaginated into the duodenum. Gastric and duodenal end was closed, and an anterior gastro-enterostomy with entero-anastomosis done. He finds that simple gastro-enterostomy is good only in cases where danger of perforation or hæmorrhage is passed. One patient succumbed to renewed hæmorrhage seven days after simple gastro-enterostomy; 2 patients had grave hæmorrhages two or three years after operation. If repeated hæmorrhages have taken place and the ulcer is situated in the concavity of the duodenum near the great vessels, gastro-enterostomy is unreliable, and a more radical operation should be performed. E. C. RIEBEL.

**Koch and Cerum: Intussusception in Children; 400 cases.** *Edinb. M. J.*, 1912, ix, 227.

By Surg., Gynec. & Obst.

The authors recommend the bloodless method of treatment, giving statistics showing that they are able to obtain better results in children under one year. The operative method is recommended for children over one year of age, as they are better able to withstand an operation. The advantages of the bloodless method are its availability in general practice and the relative safety in tender childhood. The disadvantages are incomplete disinvagination, perforation, and tendency to relapse. In the bloodless method they employ taxis and the introduction of large amounts of water under deep anæsthesia. The technique is simple.

The cases reported have been observed in a period of 19 years. Sixty per cent occurred in the first year, of which two thirds were in the fifth to seventh month. During the second year of life no more cases occurred than did in the fifth and sixth month. The most common form of intussusception is the ileo-cæcal. It was found in 81 per cent of cases under one year and 66 per cent over one year. The

predisposing factors were found to be ascarides, polypi, Meckel's diverticulum, castor oil indiscriminately given, causing strong and irregular peristalsis, and diarrhoea. The latter seems to play an important part, as most cases occurred during the fifth to seventh month, just at the time when the child is started on artificial food.

The authors lay stress on four cardinal symptoms: pain typically colic in type; vomiting, usually occurring early; blood-stained mucus per rectum, appearing about six hours after onset; and tumor mass. The blood-stained mucus may be absent in small intestine intussusception. The tumor mass is found in the upper left quadrant of the abdomen. It can be felt in the rectum in 40 per cent of the cases. All patients should be examined under deep anæsthesia. Meteorism is considered an unfavorable sign. No rise in temperature was noted during the first two days of the illness.

EDWARD L. CORNELL.

**Lenormant: A New Extraperitoneal Method of Closing an Artificial Anus or Fistula of the Intestine** (Sur un nouveau procédé extrapéritoneal de fermeture de l'anús artificiel sans éperon et des fistules labiées de l'intestin). *Bull. et mém. Soc. d. Chir.*, 1912, xxxviii, 1167. By Journal de Chirurgie.

This method consists essentially in a combination of classical procedures for reducing an artificial anus by passing a loop of catgut about the gut. It comprises the following steps:

1. A short incision of 5 or 6 mm. is made within 2 or 3 cm. of the artificial anus, and reaching as far as the aponeurotic muscle. Through this incision a No. 2 catgut suture is passed around the opening. It ends within 2 to 3 cm. of the orifice and within the wall of the aponeurotic muscle. The catgut, with its two ends caught in a forceps as they pass out through the incision, is not yet tightened.

2. The edges of the anus are freshened by folding back the mucous membrane of the gut if possible to a distance of 10 to 12 mm.

3. Union is made by bringing the mucous lips of the orifice together by means of a fine catgut thread; where these separate, a whip-stitch suture is put in.

4. Now take up the suture which forms the loop, draw it together and tie. All the layers of the gut will purse out about the orifice, which is thus closed. The ends of the thread are cut even with the knot and the latter buried under the suture, which closes the lateral incision.

5. Suture the cutaneous lips of the artificial anus.

Lenormant has employed this procedure in six patients: 4 times for a cæcal anus (3 of these cases were subjects on whom he had previously performed cæcostomy for obstruction; the fourth was in a case of cancer of the sigmoid flexure which had been removed by enterectomy, the cæcal anus also being removed for the sake of safety); once he employed it for an iliac anus, and once for a large labiated stercoral fistula, following a complex operation for appendicitis.



In these cases he has 4 times (2 cases of cæcal anus, 1 iliac anus, and the stercoral fistula) obtained primary union and complete and definite closure of the anus or fistula within the course of eight days. In the other two patients a very small punctiform fistula remained, which now and then let escape a few drops of liquid matter. The fistulae were closed by cauterization.

To sum up, we have here a procedure which very often is efficacious and so simple that it deserves to be tried in all cases of artificial anus without spur. If closure is not obtained, one is still free to perform the intraperitoneal operation.

Robineau has had occasion, in a number of instances, to employ a procedure which is analogous to that described by Lenormant, and nearly always with success. He does not even make an incision for placing the constricting thread, so that when the thread is tightened, it is buried in the passage made by the needle. Moreover, he uses horsehair in place of catgut, which is very rapidly absorbed. In the majority of cases Robineau has been able to perform this little operation without even having recourse to local anæsthesia.

J. DUMONT.

**Boekel: Resection of Two Meters of Intestine (Ileum, Cæcum and Ascending Colon) in a Form of Appendicitis Not Yet Described (Résection de deux mètres d'intestin (ileon, cecum et colon ascendant) dans une forme d'appendicite non encore décrite).** *Bull. de l'Acad. de Méd.*, lxviii, 247.

By *Journal de Chirurgie*.

There is a process which Boekel has not seen described, where there is an adhesion of the terminal extremity of the infected appendix to the anterior layer of the mesentery near the point of its origin. The appendix is perforated and a suppurating focus forms between the two layers of the mesentery. This focus, though limited in the beginning, may acquire such dimensions that it may have the appearance of a true tumor.

Boekel observed a patient in whom this condition had begun eight days before with violent pains in the lower abdomen and fever as high as 39°. Palpation between the umbilicus and the anterior superior iliac spines revealed the presence of a tumor the size of a small foetal head, smooth, only slightly movable, painful and relatively superficial. Boekel thought that it might be an empyema of the gall-bladder or appendicitis.

At operation, he found on the right side an enormous bundle of intestinal adhesions, all agglutinated and forming with the cæcum and the ascending colon a compact and almost unrecognizable mass covered over with thick adhesions; orientation in this mass was impossible. In attempting to disengage the cæcum the index finger made a rent in an enormous pocket, from which there escaped a flood of from 400 to 500 cc. of foetid pus. This pocket extended upwards toward the vertebral column. Another pocket extended downward to Douglas's pouch.

In order that he might not prolong the exploration unnecessarily and that he might extirpate the

secondary foci which were certain to be found more deeply, Boekel decided to resect two meters of intestine (80 centimeters of the ileum and 90 centimeters of the cæcum and ascending colon, as far as the hepatic flexure of the colon).

An ileocolic lateral anastomosis, with a Murphy button, re-established the continuity of the digestive tract.

Dissection of the specimen enabled Boekel to find a close adhesion of the terminal extremity of the appendix to the anterior layer of the mesentery and to discover that the appendix was perforated and communicated directly with an enormous cavity which had been hollowed out between the two layers of the mesentery.

A second laparotomy was performed in the month of August to extract the Murphy button, which had not come away, and to suture a persistent stercoral fistula.

CHIFOLIAU.

**Satterlee: Mobile-Dilated Cæcum, Diagnosis and Treatment; with Case Reports.** *Am. J. Gastro-Enterol.*, 1912, ii, 1. By Surg., Gynec. & Obst.

The author reports a number of cases of "mobile-dilated cæcum." He states that the diagnosis of these often obscure cases is difficult without the X-ray. This condition has usually been wrongly diagnosed as appendicitis, which may coexist but is not the chief source of the trouble.

The principal symptoms and signs of this condition are pain and tenderness and a varying amount of distention in the region of the cæcum. Radiographs show a much dilated cæcum, which contains the bismuth after it has passed into the ascending colon, often after two or three days. The principal points in this condition are dilatation and atony; mobility may or may not be present, and ptosis depends upon the position of the rest of the colon. The diagnosis belongs to internal medicine, and the treatment, in a large majority of cases, is medical. Massage and vibration of the colon, especially over the cæcum, hygiene and diet for constipation with the omission of cathartics and laxatives, and abdominal support with colon pads for ptosis if it exists, are the principal means. If medical treatment does not relieve, operation is indicated. Plication of the cæcum, with or without fixation, and fixation of the colon if marked ptosis is present, have given good results in his cases.

Appendectomy is often indicated, but is only part of the operation. In every case there is the necessity of studying the whole gastro-intestinal tract by means of serial radiographs and the bismuth test, besides the ordinary chemical and mechanical methods. The cases should always be followed up carefully by medical treatment.

**Flint: Embryonic Bands and Membranes About the Cæcum.** *Bull. Johns Hopkins Hosp.*, 1912, xxiii, 302.

By Surg., Gynec. & Obst.

In any large series of cases, the fine vascularized membranes found upon the ascending colon or cæ-



cum, known as Jackson's veils or membranous pericolicitis, may be simply divided into three types. The commonest group is that where the veil extends from the parietal peritoneum along the lateral margin of the colon, particularly near the hepatic flexure over into the lateral and ventral aspects of the colon and cæcum. Often the caput of the cæcum is free, but they may extend downwards not only to the caput but even to cover the proximal portion and sometimes the entire appendix as well. Another type occurs lower down, and extends from relatively the same part of the parietal peritoneum out into the head of the cæcum and usually covers the proximal half and more rarely the entire appendix as well. Veils of this description do not as a rule extend high up on the ascending colon. The third form, which is relatively rare, passes over from the ventral aspect of the colon and is continuous with or apparently adherent to the omentum. In some cases it may extend from the parietal peritoneum on the lateral wall of the abdomen over the ascending colon, and then becomes continuous with the omentum, often holding the ascending and first part of the transverse colon side by side, with a sharp angulation at the hepatic flexure if the latter happens to be long and looped. Veils of this type may be associated with such malformations as a non-rotated cæcum.

The etiology of these veils has been supposed to be due to an inflammatory process originating in the colon or adjacent structure, while as a matter of fact they are congenital. They originate after the rotation of the gut from the secondary fusions of the peritoneum, when the cæcum becomes attached to the posterior abdominal wall just over the kidney and under the liver. In some instances, these attachments, usually confined to the posterior aspect of the cæcum and colon, are excessive and extend out over the ventral surface of the first part of the large intestine, resulting, with the subsequent descent of the cæcum, in their being drawn out in the form of a thin veil or membrane. In this process the blood-vessels take part, a fact which explains the long, unbranching course from their origin on the parietal peritoneum, downward and forward into the cæcum or colon, where they communicate with those of the intestinal wall. Here the secondary union between the two layers of the peritoneum usually spares the cæcum and extends on to the colon, and gives rise to the commoner form of membrane. Occasionally the cæcum, and even the proximal portion of the appendix—or, still more rarely, the entire appendix—is covered. In such cases, we have the extensive veils which embrace the entire first portion of the large intestine, with the appendix drawn up in the process of descent. In still other instances, the attachments are confined to the region of the cæcum and appendix and thus give rise to the type of veil that covers the caput cæci and its appendage.

As these are variable in the form of the secondary attachments between the colon and peritoneum, so

also does the extent of the fusion between the part of the posterior mesogastrium which gives rise to the omentum vary within any considerable limits. Sometimes the embryonic omentum reaches out laterally and fuses with the cæcum before the descent, and not uncommonly extends into the parietal peritoneum. When such a secondary fusion takes place, the cæcum in its descent drags down the omentum with it and gives rise to that form of membrane which is continuous with the omentum along the medial aspect of the ascending colon.

The great majority of these pericolic membranes are not responsible for any symptoms, and represent simply decided variations in the normal attachment of the first portion of the large intestine. Occasionally, when they are extensive or badly placed from a mechanical point of view, they may cause obstruction, especially if any degree of ptosis is present. It is not impossible that they may have thickened as a result of chronic colitis, but in themselves are of inflammatory origin. Like Lane's band, the symptoms resemble chronic appendicitis, without a preceding history of an acute attack. There may also be reflex and gastric disturbance. The treatment for most cases is to let them alone, for they are normal but variable strictures. For instance where there is evidence of definite obstruction or constriction of the colon, the membranes should be incised along the lateral margin of the colon. In no case should they be stripped, for this proceeding denudes the colon of some of its normal peritoneum.

The formation of Lane's band on the terminal ileum is due to a process similar to that which gives rise to pericolic membranes. After the rotation of the gut, the terminal ileum ordinarily retains its free mesentery. In a number of instances, the process of secondary between fusion the cæcum and the parietal peritoneum extends out for a short distance from the cæcum or colon and involves the terminal ileum, resulting in either a partial or total obliteration of the posterior leaf of its mesentery, which thus requires an attachment to the parietal peritoneum itself. With the descent of the cæcum this fusion may cause the ileum to grow on itself and become kinked.

The majority of Lane's bands do not cause symptoms, but some, especially when associated with ptosis, undoubtedly give rise to a symptom-complex similar to that we have come to associate with chronic appendicitis.

Another embryonic stricture is sometimes found on the gall-bladder, which consists of an omentum mesentery which may reach to the fundus and extend across the transverse colon, when it becomes continuous with the omentum. These peritoneal folds ordinarily do not cause symptoms; but under unusual circumstances, such as loosening of the supports of the colon, may exert a traction in the gall-bladder, which relieves its characteristic pain. They are probably due to the fundus and its developments picking up a fold of the posterior mesogastrium in the formation of the greater omentum.



**Green: Some Points in Connection with Appendicitis in Children.** *Practitioner*, 1912, lxxxix, 508. By Surg., Gynec. & Obst.

Appendicitis is the most common of the surgical diseases of the abdomen in children. Most cases occur after five years of age; it is rare under two.

The author regards the appendix as a lymphoid structure and therefore an important abdominal organ. Among the interesting causes he mentions threadworms, three cases of which he reports. Of the symptoms, abdominal pain is practically always present, but may be referred to remote regions. In a case to which he refers, the pain was in Scarpa's triangle on the right side. He mentions one case in which severe melæna was present. The diagnosis is not at all easy, and in differentiating we must keep in mind pneumonia, acute gastritis, intussusception, intestinal obstruction, and typhoid fever. In girls, sometimes diseases of the right ovary may confuse. If melæna is present, one must think of Henoch's purpura.

The mortality in children is always graver than that in adults. There is very little difference in treatment from that of adults. C. G. GRULKE.

**Stiven: Acute Appendicitis in Children.** *Practitioner*, 1912, lxxxix, 527. By Surg., Gynec. & Obst.

In ten years, there were 4,000 cases of appendicitis at the London Hospital. Up to the age of twelve there were, on an average, 83 cases a year; up to seven years old, 20 cases; up to five years old, 6 or 7 cases. The details of the series taken, 208 in all, are:

Age	Number of Cases
2	6
3	7
4	21
5	46
6	63
7	65

Eleven of these had had one previous attack and three had had a previous operation. Seven cases had had three previous attacks, and two cases, four.

The sex in these children was two males to one female, the same as in the adult. Most of the children's cases occurred in the months of May, August, and September.

Fæcal concretions were present in 23 cases, or 11 per cent. Of 208 cases up to seven years of age, there were perforation or gangrene in 31.2 per cent and general peritonitis in 25 per cent. In 14 cases operated upon before complications occurred, the average stay in the hospital was twenty-seven days, and there were no deaths. The average mortality in the series was 41.8 per cent.

Localization of suppuration is not so common as in the adult. Skill and speed in the operator are most desirable.

The Fowler position after operation lowers the mortality. In children, continued saline enema is a failure. The children cannot bear starvation, and

should be fed such things as albumen water and perhaps a decoction of crushed raisins. Early catharsis is advisable.

Twelve per cent of these cases showed complications, which in nine cases proved fatal. The complications consisted of paralytic obstruction, pneumonia, secondary abscess, empyema, etc.

The author sums up the difference between adults and children as follows:

"Owing to their greater liability to a generalization of the infection, early operation is more imperative in children. It will be seen from the figures given above that the odds are three to two on the generalization of the infection arising; whereas, if they are operated on within twenty-four hours, the mortality, for this series at least, is nothing per cent.

"A prolonged operation and undue exposure cause relatively greater risks.

"In the after treatment, certain special methods of treatment will make all the difference between success and failure." C. G. GRULKE.

**Abrami, Brissaud, and Weissenbach: Hæmatogenous Origin of Certain Forms of Acute Appendicitis** (Origine hæmatogène de certaines appendicites aiguës). *Bull. de l'Acad. de Méd.*, 1912, lxxviii, 280. By Journal de Chirurgie.

A patient 45 years of age entered the Hôpital Cochin on May 17, 1912, and typhoid fever was diagnosed. The trouble had begun on May 3d, rather suddenly, with disturbances of digestion, fever, headache, and a copious diarrhoea. During the days following, these symptoms became worse. On the day of arrival at the hospital the patient presented all the signs of typhoid fever; the temperature held at about 40° C., and there was prostration, sub-delirium, copious serous diarrhoea, and a confluent eruption of pink lenticular patches. The laboratory examination proved septicæmia; sero-diagnosis was negative with Eberth's bacillus, but positive at 1:5000 dilution with the paratyphoid bacillus, and blood culture at two different times isolated the bacillus from the blood.

May 19th the general state of the patient suddenly became worse; stool was suppressed, the abdomen was very distended and presented a generalized muscular defense, and the pulse became very poor. In the middle of the night the patient succumbed in a state of coma, after having previously vomited greenish matter.

At the autopsy the small intestine was found to be in a state of perfect health, and there was not the slightest tumefaction of Peyer's patches or any of the other lymphoid organs. All the lesions were located in the appendix and in the cæcum. The appendix was tumefied and soft; it also presented two necrotic patches, one of which had proved the cause of the fatal peritonitis. There was one patch on the cæcum, at the point of juncture of the ileo-cæcal valve, and the rest of the organ was spotted everywhere with ecchymotic lenticular patches. In all these lesions the paratyphoid bacillus was found



in very large numbers and in an almost pure state of culture.

The histological examination enabled the authors to establish the fact that the cæcal walls had been infected by way of the blood. The ecchymotic patches on the cæcum were made up of a nodular infiltrate, which was clearly submucous and perivascular; this infiltrate was covered with numerous dilated capillaries, the openings of which at certain points were obstructed by colonies of bacilli presenting the form and staining reactions of the paratyphoid bacillus.

The history of hæmatogenous appendicitis has been built up on the anatomical and experimental data of the clinic. All that was lacking to complete the theory of the hæmatogenous origin of appendicitis was corroboration by blood culture. The case here described brings that decisive proof. If we believe that early and systematic blood culture will prove positive most frequently in those forms which early in their development are accompanied by grave general phenomena, that is, in those that begin in the manner of a general infection; in a large measure, no doubt, the extra-intestinal manifestations which frequently form a prelude to the breaking out of symptoms of appendicitis arise from septicæmia.

In two benign cases of acute appendicitis in which diagnosis was confirmed by the operation, the blood culture remained negative. CHIFFLIAU.

**Hausmann: Palpation of Gastric Intestinal Tract** (Die topographische Gleit und Tiefenpalpation und ihre klinische Bedeutung). *Med. Klin.*, 1912, viii, No. 42. By Surg., Gynec. & Obst.

Hausmann has shown that, with exception of the portion adjacent to the ileum, no part of the ileum is palpable. Knowledge of this fact makes recognition of palpated parts easier. Mere pressure or boring motions of the tips of the fingers are insufficient. Instead, rectilinear sliding motions, transversely to the axis of the part, are to be employed. The ends of the various portions of the gastro-intestinal tube are fixed. The intervening parts are more or less movable and may evade the gliding motions, but if these motions have a sufficient amplitude the respective part may be fixed finally. In case the part recedes towards the posterior abdominal wall, or is very deeply situated, deep palpation must be used. The finger-tips gradually sink to a greater depth. This progression, as well as the gliding movements, are carried out respectively at the end of expiration or during the respiratory pause. During these phases the abdominal walls are relaxed. The patient should be instructed to breathe deeply with mouth open. By observing these instructions one will avoid tension of the abdominal muscles. Posture should be arranged so that all the muscles are relaxed as much as possible. To avoid fatigue of the palpating right hand, the left is laid upon this and pressure made with the left. Deep palpation may be made easier by

pressure from behind (lumbar region). The distance between the anterior and posterior abdominal wall in the psoas region is decreased by active contraction of the psoas muscle, i. e., by flexion of the hip, with leg extended at the knee joint. Structures situated upon the belly of the psoas—transverse colon, ileo-cæcal region, appendix, sigmoid flexure—may easily be palpated. The palpation is topographical, not dependent upon the expected location of the structure in an accepted region. One determines in case of tumor if it belongs to a palpable portion of the gastro-intestinal tract, and if not, what relation it has to the various palpable portions. The relation of exudates and painful areas may be determined in the same manner. Topographical gliding and deep palpation in chronic appendicitis is more reliable than McBurney's point. The appendix, if fixed by adhesions or by its mesentery, may be palpated upon the psoas muscle. To differentiate the appendix from the cæcal portion of the ileum, it is important to bear in mind the absence of gurgling sound and the lack of change in volume and consistency over the appendix. The ileo-cæcal portion has to be palpated before attempting to locate the appendix. Isolated pain sensation produced by pressure upon the psoas is very important. If the psoas pain is bilateral it is often not significant; unilateral psoas pain indicates organic disease. In pyelitis, nephrolithiasis, floating kidney, and cholecystitis, the upper portions of the psoas are more painful; in appendicitis, cæcum mobile, and sigmoiditis, the lower portion. He speaks of contraction of the stomach and when it may be recognized—by pylorospasmus, gastrospasmus, or gastrostasis. Local accumulations of fæces are frequent in the cæcum and sigmoid flexure, also in the right portion of the transverse colon. If these accumulations are met with persistently, one may assume it to be due to pathological obstipation. In other cases of obstipation the colon may be entirely empty, as may also the ampulla of the rectum. This may be due to increased absorption in the colon (Schmidt), or more likely to atony of the small intestine (Schwartz), with delayed evacuation into the cæcum. The colon may be in a state of spastic contraction of the thickness of a lead pencil. Hausmann, however, does not take this as proof of the existence of so-called spastic obstipation. He recommends the same maneuvers for massage of the colon (palpatory massage). E. C. RIEBEL.

**Dowd: Acute Phlegmonous Inflammation of the Large Intestine.** *Ann. Surg., Phila.*, 1912, lvi, 579. By Surg., Gynec. & Obst.

The writer presented to the New York Surgical Society a man 23 years of age, who had suffered from an extensive phlegmonous inflammation of the greater part of the descending colon. During the past year he had had occasional attacks of pain in his left side. The pain became severe two and one half days before admission to the hospital and for the past 24 hours had been extreme, and had been



accompanied by bloody stools; just before admission to the hospital he had passed a large amount of blood by the rectum. He was much prostrated, complained of great pain, and had muscle spasm on the left side of abdomen; pulse 92, temperature 98°. Through an incision it was seen that the descending colon, from splenic flexure to sigmoid, was intensely indurated, red, and rigid. An anastomosis was made between the middle of the transverse colon and the sigmoid, and the intervening portion of the colon was removed. The patient made an excellent recovery. The excised portion of intestine showed acute suppurative inflammation of the intestinal wall, with numerous groups of gram-positive cocci in the submucosa.

The author had not found a similar case reported, although there are references to a "fatal and obscure form of necrotic colitis which appears to be septic in character." Phlegmonous inflammation of the wall of the stomach has been described many times. The port of entry has usually been a gastric ulcer; 98 per cent of the reported cases have been fatal.

It is believed that this phlegmon of the colon corresponded to the cases of phlegmon of the stomach, an abrasion by fecal masses, or a diverticulitis providing a place for the entry of the infective cocci. The condition of the blood-vessels showed that it was not a mesenteric thrombosis.

**Vianney: Nine Cases of Partial Resection of the Colon for Cancer, Five of Which Were Performed at One Time** (Neuf cas de résection partielle du colon pour cancer, dont cinq et un temps). 26th Cong. l'Ass. fran. de Chir., Paris, Oct. 9, 1912. By Journal de Chirurgie.

Vianney offers the following statistics on the resection of the large intestine for cancer.

The resection occurred at the following locations: once at the right flexure, once in the transverse colon, once in the left flexure, three times in the descending colon, and three times in the pelvic colon. In four instances the resection was performed in different stages, with two deaths resulting; five times colectomy was done in one stage, and *these five patients have recovered*.

The author uses these five cases which have resulted in recovery to affirm that colectomy in one stage represents the operation of choice in the treatment of cancer of the colon whenever the tumor has not become complicated with an acute or chronic intestinal obstruction. Only in these complicated cases, and also in cachectic patients, must the operation be performed in two or three stages (the method which not so long ago was considered the method of choice).

The technique comprises the following essential points: laparotomy, free excision of the tumor, immediate enterorrhaphy, and closing the stomach without drainage.

Enterorrhaphy is made with silk in two layers and should by preference be end-to-end. In case of too great an inequality in the caliber of the two

ends, or in case of extreme shortness of one of the segments, lateral anastomosis, after closing the two ends, or termino-lateral, after closing only one end, may be performed.

J. DUMONT.

**Jianu: Intra-Abdominal Myomaphy of the Levator Ani in Rectal Prolapse.** *Deutsche Ztschr. f. Chir.*, 1912, cxviii, 592. By Surg., Gynec. & Obst.

Prolapse of the rectum is due to two causes: (a) abnormal depth of Douglas' space of congenital origin; (b) primary or secondary weakening of the pelvic floor. Zuckerkandl claims that every rectal prolapse is due to a primary hernia of the perineum. Loops of gut prolapse into the rectovesical space in the male. They push the anterior rectal wall downward. Rational treatment has to consider the following points: Suture of the levator ani, fixation of the abnormally long pelvic colon, and closure of the rectovaginal or rectovesical space, respectively. Jianu suggests to carry out all procedures through the abdomen, instead of partially through the perineum.

Technique: Trendelenburg position; (1) reduction of rectal prolapse by traction upon the pelvic colon; (2) transverse incision of the peritoneum of Douglas' pouch and exposure of the levator ani; detachment of vesical floor and prostate from the rectum in men and vagina in women, respectively; (3) suture of the muscles; the sutures also pass through the muscular portion of the anterior rectal wall, and the last suture transverses the prostate in man, the vagina in woman; (4) colopecty and closure of Douglas' pouch according to Luëna, Duval, and Lenormant.

E. C. RIEBEL.

#### LIVER, PANCREAS, AND SPLEEN

**McDill: Bloodless Surgery of the Liver.** *J. Am. M. Ass.*, lxx, 1283. By Surg., Gynec. & Obst.

The chief difficulty which the surgeon encounters in liver surgery is the control of hæmorrhage, and, although numerous methods of hæmostasis have been proposed, no one method has proven universally practicable for the great variety of liver lesions.

By means of experimental work, in which he used the ordinary instruments present in every operating room, the author hoped to add to our knowledge in this field of surgery. His method consisted of an ordinary abdominal incision and a second one-inch incision below the costal margin in the right axillary line; through the latter opening he passed an ordinary enterostomy clamp armed with rubber tubing. One branch of the clamp passed through the foramen of Winslow, behind the pedicle of the liver, and the other in front of the vessels for a distance of about two inches. The compression was made near the duodenum, because at this point the vessels lie close together.

The experiments on a few dogs showed that no deleterious results followed complete interruption for 20 to 30 minutes, and it is believed that in clinical use one can render the liver bloodless for at least



8 to 10 minutes. More work along these lines, however, both experimental and clinical, is necessary before the time limit for safety in complete arrest of circulation can be accurately ascertained. To avoid too long compression, the clamp can be loosened and thus permit a partial circulation. Dangerous back pressure in the portal system is manifested by great congestion of the intestinal vessels, blueness of the gut, and by peritoneal ecchymosis. The clamp can be left in situ after an operation to control a possible secondary hæmorrhage.

When the resection of liver is extensive and the tension on the sutures is liable to cause them to tear through the liver substance, it is proposed to pass a Martin gum bandage completely around the liver, thus favoring approximation.

EDMUND H. MENSING.

**Deaver: Surgery of the Bile Ducts.** *N. Y. St. J. M.*, 1912, xii, 490. By Surg., Gynec. & Obst.

Deaver stated that, through the work of surgeons and laboratory men, it has been shown that, with the exception of malignant disease, all conditions calling for surgical interference upon any part of the biliary tract have their origin in infection. No one form of disease of the biliary tract can be identified with a particular organism. In a series of 142 operations in 1911 on biliary tract, for various lesions, 34 showed *B. coli*, 50 no growth, 46 not mentioned, 2 *B. typhosus*, 7 staphylococcus, 1 streptococcus, 1 *B. pyocyaneus*, 1 *B. aerogenes*. Even in presence of pus, some cultures showed no growth. In 182 cases of cholelithiasis which were reported by him in 1906, 94 were cultured, and 13 of these showed *B. typhosus*.

The portal circulation is the most common route taken by these organisms in reaching the biliary tract. He criticised the classification of biliary tract infection as one of declining years, introducing statistics from his cases showing the average age when the condition was known to be present to be 34 years. Low grade infection by micro-organisms greatly attenuated gives rise to gall-stone disease or cholecystic disease, with formation of stones; while acute invasions by organisms of high virulence give rise to acute forms of cholecystitis, cholangitis, and their accompaniments too rapidly to permit the formation of stones.

Gall-stone formation is the most common result of infection, especially where it is of the low grade catarrhal type. Adhesions were present in 45.4 per cent of his cases, and were due to pericholecystic or periduodenal inflammation. In some cases they gave rise to a clinical picture identical with that found in gall-stone disease.

Chronic pancreatitis is so commonly found co-existent with biliary infection that it may truly be considered a part of biliary infection, the infection most likely extending by way of lymphatics. Pancreatic disease demands either temporary drainage of the biliary tract by direct tube drainage, or

permanent drainage by some form of anastomosis between the biliary system and the alimentary canal. All cases of infection of biliary passages, unless very transient or coming as intercurrent affections in acute illness, demand drainage of the gall-bladder. Of these, any that show marked infection or a cholangitis demand common duct drainage also.

Indications for operation in disease of the biliary tract are summarized by him as follows:

1. More than one attack of true biliary colic.
2. Symptoms suggestive of upper abdominal adhesions and chronic biliary insufficiency.
3. Hydrops of the gall-bladder.
4. Obstruction of the common duct.
5. Occurrence of acute infections complicating previously existing biliary disease.
6. The evidences of pancreatic disease, acute, subacute, or chronic.

In conclusion, the author emphasized the danger of procrastination and too much deliberation, and insisted that nine tenths of the mortality of operation, so-called, was in reality mortality of delay.

R. W. MCNEALY.

**Brandt: The Construction of an Artificial Choledochus by Means of a Simple Drainage Tube.** (*Die Bildung eines künstlichen Choledochus mittels eines einfachen Drainrohres.*) *Deutsche Ztschr. f. Chir.*, 1912, cxix, 1. By Surg., Gynec. & Obst.

The construction of an artificial choledochus with a simple drainage tube is indicated in all cases where anastomosis is impracticable or impossible; it is an ultimum refugium where a connection of the hepaticus with the intestines is otherwise impossible. A simple drainage tube is inserted with one end in the hepaticus and the other in the duodenum. The tube should not reach deep into the lumen of the duodenum and should be carefully covered with omentum. The author reports five cases in which this reconstruction of the choledochus was performed at Wilms' clinic in Heidelberg. In the first two cases a heavy silk thread attached to the upper end of a tube led through the choledochus into the duodenum, and from there out through the abdominal wall. In the first case it had to be left in place, the thread being pulled out alone; in the second it was removed through the abdominal wound. Case 3 threw the second tube up by vomiting, after the first one had been replaced for insufficiency. In the fourth case the tube, with its lower end inserted into the stomach, was thrown up by vomiting three months after the operation, and replaced by a second one, which was fixed with catgut and carefully covered with omentum. In the fifth case the tube was fixed with catgut and covered with omentum to be left in place. The first three cases required a prolonged after treatment, the tube being free in the abdominal cavity and uncovered by omentum, thus allowing the escape of bile. In all cases the operation proved to be life-saving, and the success in the first two cases was ascertained to be



absolute 14 to 15 months after the operation. It is a matter of opinion whether it be justifiable to substitute this operation if anastomosis is possible.

F. G. DYAS.

**Williams: Transduodenal Choledochotomy for Stone in the Ampulla of Vater; with Fistulous Communication Between the Gall-Bladder and the Duodenum.** *Ann. Surg., Phila.*, 1912, lvi, 575. By Surg., Gynec. & Obst.

The author recites the case of a female of thirty-two years, who presented symptoms of common duct obstruction with but slight jaundice, and with history of a violent attack of gallstones three years before.

Operative findings were: Organized adhesions covering a shrunken and thickened gall-bladder, whose body was crossed by a strong adhesion band leading from duodenum to liver; fistulous communication three eighths of an inch in diameter between the fundus of the gall-bladder and the duodenum (demonstrated effectively when the duodenum was opened later); no stones in the gall-bladder, in hepatic duct, or in free portion of common duct; a stone the size of a cherry was removed from the ampulla of Vater by the transduodenal route, this method being selected owing to the obscuring of the area by oozing from torn adhesions. Uneventful recovery of the patient.

Points of special interest are: Obstructive jaundice in the face of an effective fistulous communication with the bowel. This was probably due to frequent mild attacks of cholecystitis, with oedematization and consequent closure of the fistula, plus effects of the adhesion band. Jaundice was never at any time very deep, and this would tend to substantiate this supposition. Secondly, the method of management was unique in view of the fact that the gall-bladder was neither removed nor drained, the latter being the universal custom apparently. In this case, so far as infection was concerned, there seemed no indication; and even had infection been present, except of a severe nature, an additional good opening was present for drainage. Here it would have been necessary either to remove the gall-bladder and close the fistula in the bowel, or the bladder might have been left, its fistula and that in the bowel closed, and then gall-bladder drainage made. It was out of the question to drain the bladder with the duodenal fistula opened. Therefore, for the benefit of the patient, from the viewpoint of time and shock-saving, the gall-bladder with its fistulous opening into the duodenum was allowed to remain as it was, simply severing the constricting band and covering raw surfaces as much as possible.

**De Bersaques: Hæmorrhagic Cyst of the Pancreas** (Kyste hémattique du pancréas). *J. Méd. de Brux.*, 1912, 442. By Journal de Chirurgie.

The author reports the following case: H., 50 years old, had since 1892 presented slight dyspeptic symptoms; in 1905 he suffered from obstinate

diarrhœa after meals; in 1907 a slowly developing tumor appeared in the upper part of the abdomen, without any appreciable changes in the general condition. In May he once more felt violent pains in the upper part of the abdomen. Diagnosis of peritoneal extravasation was made. After a Carlsbad cure, emaciation became very marked, while pains persisted in the region of the waistline.

In August, 1908, when a diagnosis of tuberculous peritonitis had been arrived at, a puncture was made and 500 gr. of colored fluid drawn from the peritoneal cavity; examination showed that it was of non-tuberculous character. The puncture was followed by active pains in the abdomen. After further examinations a treatment with light baths was tried, and brought about reduction of the volume of the abdomen. In 1909 and 1910 the patient had hæmatemeses, which weakened him very much.

On November 10, 1910, De Bersaques examined the patient, who was then very much emaciated, and found the following facts: The abdomen presented considerable distention, with the superficial venous plexuses very clearly marked; the distention was rather regular. Under palpation it gave a dull percussion note throughout its whole extent, except in the left upper region; there was also dullness, though less distinct, on the right side, below the iliac fossa. The dullness of the upper part merged completely with that of the liver. There was no ballottement in the renal region. Phlebitis of the right leg was present.

Diagnosis was undecided as between cyst of the mesentery and cyst of the pancreas. On November 23d, in view of the gravity of the patient's condition, De Bersaques operated. He found a cystic tumor which, when punctured, gave forth a reddish liquid. He made an incision of the cyst, emptied it of its contents, and found that it had developed between the stomach and the transverse colon. He was successful in completely disengaging the cyst and in fastening its nutritive vessels. Closing without drainage; lasting cure.

It is to be deplored that neither a histological examination of the wall of the cyst nor a physiological and chemical examination of the liquid was made in connection with the case.

PAUL MATHIEU.

**Gray and Anderson: Developmental Adhesions Affecting the Lower End of the Ileum and the Colon.** The University Press, Aberdeen, Scotland, 1912. By Surg., Gynec. & Obst.

Under this heading are included four adhesions, known as the following: (1) Lane's terminal ileal kink, (2) Jackson's membrane, (3) splenic pericolic adhesions, (4) mesosigmoid adhesions.

Lane's kink is caused by a quadrilateral or triangular shaped membrane extending from the right iliac fossa to the antimesenteric aspect of the ileum, and attached to it for from 1½ to 4 inches. The effect of this membrane is to cause a kinking of



the small intestine and a rotation on its long axis in a downward direction.

Jackson's membrane is a vascularized membrane extending from the parietal peritoneum near the hepatic flexure to the internal longitudinal muscle of the ascending colon, ending just above the caput. Associated with this membrane there is sometimes a narrowing of the colon in the region of the hepatic flexure, resulting in distention and ptosis of the ascending colon and cæcum.

Splenic kink, sometimes called Payr's disease, is due to a short, tense, phrenocolic ligament. The obstruction is apt to be more acute in this region, and results in marked distention and ptosis of the transverse colon.

Lower sigmoid or mesosigmoid adhesions extend from the left iliac fossa to the mesosigmoid, or less commonly, the sigmoid.

As to the origin of these different adhesions, there are several theories. Lane believes them to be due to chronic constipation. Morris, Binnie, and others believe them to be due to pericolic inflammation. C. H. Mayo believes Jackson's membrane to be due to a congenital process formed when the cæcum descends from under the liver.

All of these theories are objected to by Gray, and his idea is that the adhesions are caused by an excess of "physiological fusion."

The symptoms caused by the adhesions in question are of acute and chronic nature. The chronic symptoms are both general and local. The general symptoms are those of autointoxication, such as: staining and wrinkling of the skin, excessive sweating, enfeebled circulation with cold extremities,

slight temperature, loss of flesh, muscular degeneration, enteroptosis, dulling of the mental faculties, with restlessness during the night, headache, painful joints, and cystic degeneration of the breasts, which is apt to be followed by cancer. The local symptoms are: heavy distended feeling in the abdomen, slight twinges of pain, borborygmi. Constipation is usually present and of long standing. X-rays may show a distention of the intestinal tract proximal to the obstruction.

Acute symptoms vary greatly in intensity. Pain and tenderness become more severe than formerly, and rigidity is often present. Symptoms of complete obstruction may develop.

The diagnosis is often difficult, but strong suspicions as to the true difficulty are often aroused when the long history of the trouble is considered together with the whole picture. The erroneous diagnoses most often made are: appendicular colic; duodenal or gastric ulcer; chronic intussusception; movable kidney; renal colic; tubo-ovarian disease; cancer of the colon; mucous colitis.

The treatment adopted should be surgical, with the division of the offending membrane and covering of the raw surfaces with peritoneum. The peritoneum is usually sutured over the raw surfaces with very little difficulty, but occasionally it is advisable to use a part of the omentum in covering over the raw surfaces. Where extensive adhesions are present, an ileocolostomy or ileoproctostomy may be necessary.

The prognosis is good as to the recovery of good health. Constipation is usually entirely relieved. A few cases have had occasional attacks of diarrhœa.

JAMES H. SKILES.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, ETC.

**Klemm: Acute Osteomyelitis of the Pelvis and Sacrum, together with Four Cases of Osteomyelitis of the Vertebrae** (Die akute Osteomyelitis des Beckens und Kreuzbeins nebst 4 Fällen von Wirbelosteomyelitis). *Beitr. z. klin. Chir.*, 1912, lxxx. By Surg., Gynec. & Obst.

Among 1469 cases of osteomyelitis collected from the literature, there were 24 cases involving the pelvis. Klemm's percentage was higher, he having 269 cases of osteomyelitis, among which there were 40 pelvic cases. Nearly half of the cases occurred in children from eight to twelve years of age. Seventy per cent of the cases were the result of a staphylococcus infection. The ilium is the bone most frequently involved, 26 of the 40 cases occurring in this bone. There was either a diffuse softening of the entire medulla or a circumscribed abscess. The old teaching that suppurative osteomyelitis has its seat of predilection in the shaft of long bones, and that tubercular infection takes place in the epiphyses of long bones and in flat and spongy bones, can no longer be maintained. It has been

conclusively established that a staphylococcus infection will involve not only the epiphyses, but the flat and spongy bones. In fact the two processes are at times very difficult to differentiate clinically, or even pathologically. In sacral osteomyelitis the sacro-iliac joint may be implicated, the same being the case when the posterior portion of the ilium is the seat of necrosis. The spinal canal is sometimes, though rarely, affected. Von Bergman has said that osteomyelitis of flat bones takes its origin from those areas especially where there are the largest deposits of spongy (vascular) substance. This happens to be also the seat of the greatest developmental activity. Osteomyelitis of the pubic and ischial portions of the pelvis is more rarely encountered.

The general symptoms of osteomyelitis of the pelvic girdle are those characteristic for this disease elsewhere. There is the same profound intoxication which is so characteristic. Later on, abscesses are formed, which point at various places within and outside of the pelvis. Early treatment is very essential and should be most radical. The entire



diseased area should be exposed and removed, no matter how much of the bone is thereby sacrificed.

WILLIAM HESSERT.

**Fraser: The Relative Prevalence of Human and Bovine Types of Tubercle Bacillus in Bone and Joint Tuberculosis Occurring in Children.** *J. Exp. Medicine*, 1912, xvi, 432.

By Surg., Gynec. & Obst.

Fraser here presents a report of a study of 70 cases of bone and joint tuberculosis; 39 cases were of joint disease, 31 of bone disease. All the patients save 3 were under 12 years of age. Only material removed by operation was examined. Guinea pigs were inoculated with the material and the bacilli isolated from the animals at the end of four to six weeks. The following means of differentiation were then made use of: (a) The original culture test; (b) The morphological test; (c) The special culture test; (d) Theobald Smith's test; (e) The inoculation test. Brief results of the technique are given.

The results of these studies showed that, of 67 children, 41 (61 per cent) were infected with the bovine type, 23 (34 per cent) with the human, and 3 with both; 41 of these cases were under 4 years of age and of this number 29 (70+ per cent) showed the bovine type. In 21 instances a history was obtained of pulmonary tuberculosis in the patient's family. From 15, or 71 per cent, of these 21 patients, the human type of bacillus was recovered, as contrasted with 17 per cent human type for those patients who gave no such family history.

Fraser concludes that a large proportion of joint and bone tuberculosis occurring in Edinburgh children is of the bovine type, and points out that his results are proof of the condition of the milk supply.

JAMES F. CHURCHILL.

## FRACTURES AND DISLOCATIONS

**Worms and Hamant: Fractures of the Neck of the Femur in Childhood and in Adolescence** (Les fractures du col du fémur dans l'enfance et dans l'adolescence). *Rev. de Chir.*, 1912, xlvii, 416.

By Journal de Chirurgie.

After being for a long time confused with separation of the epiphysis, the fractures of the neck of the femur are now found to be more frequent in childhood and adolescence than we have so far believed.

Worms and Hamant, judging by their radiographs and experiments on the dead body, even believe that in young people these fractures are quite as frequent as separation of the epiphysis.

The fracture may occur at all ages, but the periods of predilection are adolescence and old age, and in young people the years from 10 to 18.

The fracture is nearly always due to direct causes and in those sometimes the cause is insignificant; in such cases we must grant a special fragility of the bone tissue. Finally, a decrease in the angle of inclination of the neck, a primary coxa vara, may possibly create a predisposition for this fracture.

Fractures of the base of the neck (and these are

sufficiently common to be distinguished from separation of the epiphysis) occur most frequently in young people. Finally there is a variety of mixed fractures, which include complicated separation of a bone splinter, either supracerically or subcerically, and constitute a distinct variety of fracture.

Penetration is rare in complete fractures. But it is not rare to observe incomplete or greenstick fractures and the subperiosteal fractures in general which, here as elsewhere, occur especially in youth.

The seriousness of complete fractures results entirely from their vicious union; this leads to trochanteric coxa vara, a type to be contrasted with essential coxa vara, which is chiefly cervical. Pseudarthrosis is rare.

The incomplete fractures, however, so far as their origin is concerned, probably must also be classed with the forms of coxa vara called essential. The disturbances of growth to which they give rise may lead even to a coxa vara characterized by curvature of the whole superior epiphysis.

An absence of symptoms in general characterizes these fractures. Impotence, deformities, and pain are often absent, so that it is only by radiography, which must never be neglected in these injuries, that the diagnosis can be made.

We may, however, find slight ecchymosis in the popliteal pit. In fractures of the head we may note tenderness and tumefaction in the triangle of Scarpa at the external border of the sartorius. The pains are more intense in juxta-epiphyseal fractures. Abnormal mobility, because of penetration, is rather marked in the region of the great trochanter. Symptoms other than this may be absent.

Incomplete fractures can be diagnosed only with the aid of radiography.

The prognosis in all these fractures depends upon orthopedic complications, which are rather frequent; among these complications is the development of coxa vara of one of the types described above. Vicious and exuberant callus is the result of an exaggerated process of repair.

The condition which most frequently has to be differentiated is simple contusion, and every contusion of the hip in young people should be radiographed. Distinction from separation of the epiphysis is often a delicate matter; the immediate symptoms are however less marked than in fracture. Luxations remain to be differentiated, but that in general is more easy.

If the injury is old, the fracture must be differentiated from coxa vara; this is done by the etiology of the condition. Diagnostic distinction from congenital dislocation is possible by the presence in the latter of displacement of the head of the femur; distinction from coxalgia is possible by the presence of a curvature of the femur.

Treatment has during the last few years undergone an interesting development. Its aim is above all to avoid coxa vara. If the fracture is recent and incomplete, treatment consists in a rigorous immobilization with extension; walking must not be



permitted until late, in order to avoid throwing weight on a callus before it has become very resistant.

If the fracture is complete, perfect reduction is essential for the re-establishment of normal function. Experimentation and clinical experience have shown that the best position for immobilization is adduction and internal rotation.

The open treatment is indicated in the juxta-epiphysary fractures, with extensive lacerations of the capsule. Between fixation by means of inserting a medullary peg without arthrotomy, and arthrotomy followed by plating and enclosing in a plaster cast, the authors give the preference to the former of these operations.

If the fracture is old, it is above all the treatment of coxa vara which is called for. This means osteotomy of the neck and resection of the head; but the operation which seems to give the best results is horizontal osteotomy or oblique subtrochanteric osteotomy, which has the advantage of being extracapsular. The treatment of pseudarthrosis does not differ from that of pseudoarthrosis in the adult.

I. OKINCZYC.

**Gelinsky: Fracture of the Patella.** *Zentralbl. f. Chir.*, 1912, xxxix, No. 45. By Surg., Gynec. & Obst.

Early movement is essential in the after treatment of fractured patella to overcome the tendency of muscular contraction and contraction of the soft parts, producing a stiffening of the joint. The author constructed a splint which permits graded flexion and extension of the knee-joint without change of position. The splint represents a double inclined plane with ratchet attachment at the angle. It is connected with an endless screw running in the base of the apparatus. The thread of the screw is very fine and the attached handle very long. As a result the movements may be graded in fractions of a millimeter. Flexion gradually stretches the muscle; if a sensation of tension occurs flexion is at once stopped. The muscle soon accustoms itself to the new position and tension ceases. After 10 or 15 minutes all disagreeable sensation is gone and further flexion can be begun. The exercises may be continued in this manner for twelve hours or more each day. At the close of the exercise the space traversed during the day is gone over rapidly several times by turning the handle backwards and forwards. Gelinsky describes two cases in which the bone suture cut through the bone after operation. In the first, a second suturing was done; while in the second, a metallic clamp resembling that of Maligne was applied subcutaneously. The clamp remained in situ after the patient left the bed, and was removed 22 days after operation. Gelinsky emphasizes the importance of exact suture of the extensor apparatus and the relative unimportance of the bone suture. In further cases he would dispense with the bone suture and substitute this with the clamp, after exact opposition and suture of the connective tissue bands constituting the ex-

tensors. The clamp permits immediate movements, eliminating the possibility of breaking or cutting of bone. In case of loosening, the clamp can be tightened. The prongs of the clamp are anchored in the patella and do not protrude into the joint. They may easily be kept aseptic. The splint has been used with advantage in inflammatory affections of the knee-joint, especially in gonorrhoeal inflammations.

E. C. RIEBEL.

**Martin: Injuries to the Semilunar Cartilages; A Personal Experience of 449 Cases of Operation.** *Lancet*, London, 1912, clxxxiii, 1067.

By Surg., Gynec. & Obst.

Between the year 1900 and the year 1911 the author has operated upon 449 cases (413 hospital and 36 private) diagnosed as suffering from injury to the semilunar cartilages. The author is not satisfied that there is ever a true detachment, for even where the split is very near the attached margin, a narrow rim of cartilage still retains its normal position. In the present series of cases, 95.5 per cent of them showed definite splits or tears, so that only in 4.5 per cent there was no definite pathology.

Coal miners are the most frequent sufferers from the torn semilunar cartilage, and in the present series, out of 449 cases, 282 occurred in miners while following their employment. This gives a percentage of 62.8. This he explains by the fact that the coal miner performs his work with his knees more or less flexed. Football players are also very liable to the accident. Out of the 449 cases, the accident occurred 81 times while playing football, a percentage of 18.

The internal semilunar cartilage is much more often injured than the external; the former shows a percentage of 92, while the latter shows a percentage of 8. The right knee is slightly more frequently affected than the left, the percentage of the one being 53.3 and the other 46.7. Sometimes it is impossible to diagnose whether, in the case of an injured knee, the internal or the external semilunar cartilage is at fault.

The majority of sufferers from torn semilunar cartilage give a very typical history. When one first sees the patient the primary tear occurred months or years previously, and the subsequent attacks of "something going wrong with the joint" have been comparatively slight, consisting, perhaps, of little more than experiencing a click or a snap at the inner side of the knee with pain in the same situation. Then momentarily the joint locks, and suddenly, after moving the knee himself or somebody moving it for him, another click or snap is experienced, and full power of movement is regained. When the primary tear takes place the symptoms are more severe. The best time to operate is after the first week or ten days following the primary accident.

Previous to and during operation the most rigid antiseptic precautions are called for. The incision used is a transverse one, extending, in the case of the



internal cartilage, from the inner border of the patellar tendon backwards for about two inches in the line of the articulation. In every case the author removes not only the detached piece of cartilage, but endeavors to ablate the portion still retaining its normal attachment; and since doing this he has had no patient return with recurrence of symptoms. No splint is used, and the patient is told to commence to move his knee as soon as he can. Infirmary patients are discharged as a rule on the tenth day, being then able to carry out full movements of the joint.

*After history.* Except in a very few instances, patients have been quite satisfied and have told the author that the joint was as strong as ever. Where the operation has been upon amateur or professional football players, it has enabled them to play again, and many of them are still playing.

DONALD C. BALFOUR.

**Ross and Stewart: A Study of Sprain-Fracture as an Essential to the Occurrence of Dislocation.** *Ann. Surg., Phila., 1912, lvi, 599.*

By Surg., Gynec. & Obst.

Ross and Stewart contend that the integrity of joints depends on the ligaments which are made of white fibrous connective tissue. This tissue is inelastic, and the strongest tissue in the body. When the breaking strain necessary to produce luxation occurs, it is the bony and periosteal attachment of the ligament that gives way, and not the fibers themselves, thus producing the sprain or tear fracture. They have attempted to prove the contention by 38 experiments on living dogs, 14 on the cadaver, and by X-ray pictures of all luxations taken in several planes. In every instance a sprain-fracture was demonstrated, and in no instance were the ligaments torn or stretched. They believe, therefore, that sprain-fracture is the first step of, and an essential factor in, the production of luxation. Therefore all luxations should be treated for a longer period than is usually the case, and the limb should be dressed in a position to favor the reduction of the fracture and the coaptation of the broken surfaces. Their conclusions are:

1. Practically all, if not all, dislocations are permitted by the primary occurrence of strain of tendons and ligaments, followed by avulsion of tendons, and then sprain-fracture or gross fracture.

2. It is possible that some dislocations are permitted to occur by separation of the fibers of the capsule in place of by sprain-fracture or gross fracture.

3. All dislocations should be skiagraphed, and if evidence of fracture is not found at first, pictures should be taken in many planes.

4. All dislocations should be treated as if fracture had occurred, even in the event of negative X-ray evidence.

5. Some sprain-fractures are too small to be shown by X-ray pictures.

6. Often there is spontaneous reduction of dislocations, and sprain-fracture or gross fracture is the only evidence left that can be detected by X-ray.

7. The sites of sprain-fractures or gross fractures provide the foci from which the osteoblasts issue, in those cases showing excessive callus or covering of joint surfaces with osseous tissue; moreover, the softer tissues found in joint cavities within a short time after the occurrence of dislocations are often in some stage of transformation into bony tissue.

8. Sprain-fractures, or fractures occurring consistently in experimental dislocations on cadavers, afford the most positive proof of the fact that dislocations are permitted to occur in this way; but failure to demonstrate sprain-fractures or fractures consistently in experimental dislocations on cadavers means nothing, since the stage to which degeneration has advanced determines whether the greater tensile strength remains in the tendons and ligaments or not.

9. Whether the force be suddenly or slowly applied, sprain-fracture or fracture precedes the occurrence of practically all, if not all, dislocations.

**Vaughan: Central Dislocation of the Femur.**

*Surg., Gynec. & Obst., 1912, xv, 249.*

By Surg., Gynec. & Obst.

Vaughan has collected from the literature 25 "clear" cases of central dislocation of the femur, to which he adds one of his own, and 39 "doubtful" cases. The symptoms closely resemble those of impacted fracture of the femoral neck, from which it is distinguished chiefly by the X-ray or by feeling through the rectum the head of the femur in the pelvis. In the 26 "clear" cases the mortality was 30 per cent, and of the 18 recoveries only 3 were perfect as to function. In 37 "doubtful" cases the mortality was 47 per cent. If the usual methods fail to reduce the dislocation, open operation is advised. This had to be done in Vaughan's case. The head and neck of the femur were exposed, and attempts were made by traction and manipulation to withdraw the head through the ring of acetabulum, which fitted closely around the neck and had to be pried open with a lever before the head could be withdrawn.

**SURGERY OF THE BONES, JOINTS, ETC.**

**Dujarier: The Open Operative Treatment of Recent and Old Fractures** (De l'intervention sanglante dans les fractures récentes et anciennes). 25th Cong. de l'Ass. fran. de Chir., October, 1912.

By Journal de Chirurgie.

Since his communication of last year, Dujarier has operated upon 24 fractures of long bones: 16 of the leg, 4 of the forearm, 2 of the humerus, and 2 of the femur. Thirteen of these fractures were recent; 11 were old. In treatment of fractures of the leg, he insists upon a few details of technique. Almost all of these fractures were oblique, some were hooked,



some were looped. Dujarier believes that, when practicable, looping with a strong copper ligature gives a stronger and a more solid coaptation. In a few cases, reduction was so perfect that the radiogram failed to show the line of fracture. When the two loops are well tightened it is needless to apply a plaster cast. A simple dressing suffices, and massage and mobilization can be commenced within a few days. For the reduction of leg fractures he makes use of Lambotte's tractor. Especially in cases of absolute non-union, where powerful traction is necessary, has he found this instrument very useful.

There were three non-united fractures and one recent fracture of the forearm. In these fractures of the forearm, Dujarier concerns himself only about the radius. When this bone is well reduced the ulnar fragments spontaneously come in contact and it is needless to act upon the ulna. In each of these four cases he obtained coaptation with a single hook. The hook gives to a sutured bone a perfect rigidity, secures to the radius its normal internal concavity, and restores the integrity of the interosseous space. The late results were excellent, consolidation being obtained in from 35 to 45 days. Pronation and supination were retained, and patients could resume work.

Only two cases of fracture of the humerus were operated upon. One was a case with fracture of the surgical neck, with displacement inward of the inner fragment. Reduction was effected and maintained by the introduction of a hook; union resulted in 25 days. The other was a fracture of the lower third, with displacement forward of the lower fragment. Reduction in this case was maintained with a single hook, and union was complete in 40 days. In his two fractures of the femur, one recent and one old, reduction was obtained and fixation effected by two hooks. These cases were operated upon recently, and the author is not ready to report the results.

In general conclusion, Dujarier says that in his cases he did not employ drainage, and that he always obtained healing by first intention. He believes that by operating with gloves, by scrupulously keeping the fingers out of the wound, and by delaying intervention until the soft tissues have somewhat recovered from the immediate effects of the accident, one can expect and obtain healing by first intention. The fate of the foreign metallic bodies varies. The hooks may usually be left in place indefinitely. It is almost always necessary to remove the loops of copper wire. Dujarier removes them about the thirteenth day, when consolidation is established. All of the recent fractures of the leg were consolidated in from 30 to 35 days. The consolidation of pseudarthroses is slower, taking from 50 to 60 days or more. At the end of two months, in cases in which union is not complete, the limb is immobilized in salicylate of soda bandage and the patient is allowed to walk. The only accident noted was an ulcer of the leg developing at the level of the

operative wound for an oblique fracture. This ulcer was accompanied by an eczema. Both ulcer and eczema were completely healed at the end of four months.

J. DUMONT.

**Taylor: Progressive Curvature of the Radius (Madelung's Deformity) Corrected by Osteotomy.** *Med. Record*, 1912, lxxxii, 752.

By Surg., Gynec. & Obst.

Progressive curvature of the radius occurs mostly in girls of eleven or twelve years of age, and is usually bilateral; it is sometimes a familiar disease. The etiology is unknown. It consists of a progressive bending of the radius, concavity forward; the carpus and hand are carried forward with the radius, simulating an anterior luxation, but the ulna, owing to its loose attachment to the carpus, remains in its original position, making a projection on the dorsal aspect. The shaft of the radius is also bowed away from the ulna, increasing the inclination of the epiphyseal line. The radial curve may be mostly at the distal end, or it may involve most of the shaft. If the deviation is low down, wrist motion and rotation may be more or less blocked. There are varying degrees of pain, tenderness, weakness, and disability, and the deformity is always unsightly. The affection progresses for a year or two, after which it becomes fixed and painless. Deformity may be corrected and function restored by a cuneiform osteotomy of the radius one inch above the wrist, moderate hypercorrection, and fixation in a splint for four weeks. Gentle massage and passive movements may be begun in two weeks after the operation.

A successful result is reported in a girl of fifteen.

**Desmarest: On the Treatment of Traumatic Separation of the Lower Epiphysis of the Femur, in Particular by Apposition with Plates and Bone-Screws** (*Sur le traitement du décollement traumatique de l'épiphyse inférieure du fémur, en particulier par la suture à l'aide de plaques et de vis*). *Rev. d. Chir.*, 1912, xxxiii, 517.

By Journal de Chirurgie.

Simple separation of epiphyses generally lends itself to reduction and immobilization, but it is not uncommon to observe separation associated with vascular or nervous complications or with a wound which establishes communication between the focus and the exterior. In this last case open intervention may be necessary, but before proceeding to it the more conservative methods should first be resorted to.

Though it is granted that reduction is the rational treatment for simple separations of the epiphyses, it does not mean to say that this reduction is easy or even always possible. Cases of false reduction are not exceptional, and manifest themselves late through disorders that are to be considered grave from the point of view of the growth of the lower member.



Desmarest does not believe in the efficacy of reduction by extension, nor of immobilization in continued extension; the method of reduction in flexion with immobilization in this position is certainly preferable; but sometimes it is not well borne and at other times the results are not all that could be desired. Led by the critical study of his results, Desmarest would advise bloody treatment of separation of the epiphyses of the lower extremity of the femur only in certain cases and after proven failure of bloodless methods.

He gives the preference to the lateral incision, since it is less mutilating. He also believes that it is preferable for insuring immediate fixation of the fragments. In one case he employed aluminum splints, with rather good results. These splints are easily modeled to fit the fragments requiring coaptation and are held in place by bone-screws which are adjusted about the cartilage at the point of juncture. The results obtained by Desmarest under these conditions date back a year, seem satisfactory, and appear to be still improving.

I. OKINCZYC.

**Payr: The Operative Treatment of Knee-Joint Ankylosis.** *Arch. f. klin. Chir.*, 1912, xcix.

By Surg., Gynec. & Obst.

The bloody mobilization of an ankylosed knee-joint is an operation which is technically difficult, in its indication very subtle, in its after treatment very tedious and laborious, but very gratifying in its result. The original idea came through Helferich, Hoffa, Murphy, and Payr were instrumental in making it popular. Payr favors the interposition of tissue, and does not think that the transplantation of a whole joint (Lexer) promises as much. He favors the use of pedicled flaps, and uses free flaps only in secondary operations. Three points are of importance for the success of the operation: (1) exact indication, (2) good technique, and (3) efficient after treatment. The operation is indicated in youthful individuals, not in children; and in people who are willing to undergo the inconvenience of long treatment, who still have a good muscular apparatus, and in whom the primary disease which led to the ankylosis is entirely cured. This explains the contraindication where disease persists. Röntgen diagnosis is paramount. The technique is varied. The author uses no constriction, but ties every vessel, opens broadly the capsule, and removes all cicatricial tissue and such parts of the capsule and joint as may interfere with free motion. He models the joint surfaces to form mechanically free joints, then interposes a pedicle of the fascia lata over the femoral joint surface and closes all incisions. The after treatment consists in early, gradual motion and passive exercise, always with the view of not disturbing the skin cicatrix. Too long rest and too little excision of soft parts are responsible for poor results. Payr's results were gratifying.

CARL BECK.

**Stuckey: The Free Transplantation of Bone in the Treatment of Pseudarthrosis** (Ueber die freie Knochentransplantation bei der Pseudarthrosenbehandlung). *Beitr. z. klin. Chir.*, 1912, lxxx, 1.

By Surg., Gynec. & Obst.

Displacement of the fragments and interposition of soft parts are among the frequent causes of non-union. Such cases have been treated by freshening the ends of the bones in various ways, by wedging one fragment into the medullary cavity of the other, or by one of the many means of fixation with suture, nails, staples, pegs, or plates. Union, however, does not always follow this treatment, owing to lack of callus formation. Another mode of treatment has for its object the stimulation of callus formation by such means as friction of the fragments, hammering the seat of fracture when superficially situated, or by the injection of defibrinated blood. Compound comminuted fractures, with infection and exfoliation of loose fragments, frequently result in non-union, owing to loss of continuity. In the latter class of cases the above mentioned methods are useless, and some form of transplantation must be practiced. At first autotransplants, obtained from the neighborhood of the defect, were employed. The bony transplant was, for better nourishment, left attached to a pedicle of soft parts. Experiments soon showed that a pedicle was unnecessary, as a free transplant would heal in.

Stuckey makes an autotransplantation wherever possible, in preference to using homo- or heterotransplants. He reports ten cases of non-union treated by free transplants with very good results. Good union is conditional upon the absence of suppuration, and while union was slow to occur in some of his cases it eventually took place, even as late as six months or longer. The technique consisted first in freshening the ends of the fragments. The frequent occurrence of a true new joint with capsule and synovia was noted. The medullary cavity was excavated sufficiently to receive the transplant. The latter was taken preferably from either the tibia or fibula of the same individual. The author believes that the transplant should not be detached from its overlying periosteum. It is then driven into the medullary cavity of the fragments. Further security is lent by wires or nails if necessary. The article concludes with detailed records of the cases operated upon.

WILLIAM HESSERT.

**Axhausen: Transplantation of Joints.** *Arch. f. klin. Chir.*, 1912, xcix, 1. By Surg., Gynec. & Obst.

Axhausen reports histologic observations on the homoplastic transplantation of joints in rats and rabbits. The lower end of the femur was implanted into the subcutaneous tissue of the back in 8 rats, and histologic examination of the transplant made at intervals of 3 to 100 days. In rabbits the patella and pieces of the epiphysis of the femur were used for transplantation in a series of 20 animals. Examination shows that the transplanted tissue cells



remain for a time in an unchanged or indifferent stage. Part of the cells retain their normal structure and staining properties permanently. The remainder show retrogressive changes, with shrinkage of the nucleus and total dissolution of the nucleus. These changes regularly take place from the periphery to the centre. The bone cells in the transplant without exception go from the indifferent stage to the stage of shrinkage and destruction of the nucleus. Substitution takes place chiefly from the periosteum and medulla transplanted with the bone tissue. Bone tissue, in the histologic sense, is therefore not transplantable.

The superficial parts of the medullary tissue nearest the mother substance retain their vitality. The bulk of the medullary tissue undergoes necrosis, beginning at the periphery and extending into the depth. Substitution takes place from the surrounding connective tissue and from the osteogenic elements in the surface layer. Medullary tissue, histologically, can therefore be transplanted.

The joint cartilage in the zone adjacent to the mother substance shows definite signs of life after the end of the indifferent stage. The deeper lying cells show destruction of the nucleus. Active proliferation of the cells in the live remnant of cartilage results in a cellular substitution of the dead cartilage cells with persistence of the ground-substance. When live cartilage is absent, the necrotic cartilage is removed by lacunar or vascular resorption. Joint cartilage, both histologically and practically, can be transplanted.

The epiphyseal cartilage, after a prolonged indifferent stage, shows only a flat superficial zone of vitality under the perichondrium or at the point of section. The major part of the epiphyseal cartilage undergoes destruction. Cellular substitution plays only a minor rôle. Lacunar and vascular resorption removes the greater portion of the dead tissue. Ossification occurs only in the preserved piece of cartilage. Developmental disturbances are the natural sequence. Epiphyseal cartilage, accordingly, is transplantable in the histologic sense, but not enough for practical purposes. E. P. ZEISLER.

**Buchanan: A New Method of Bone Transplantation for Ununited Fracture.** *Internal. J. Surg.*, 1912, xxv, 309. By Surg., Gynec. & Obst.

The method described consists in (1) refreshing the ends of the fragments and adapting them to each other; (2) reflecting the periosteum from the exposed surfaces over the presenting area for a space sufficient to permit the removal of a transplant from each fragment; (3) sawing from the entire thickness of the compact tissue (surface to medulla of each fragment) a rectangular transplant; (4) making the transplant that comes from the larger and better fragment twice as long as that cut from the other fragment; (5) cutting both transplants

exactly the same width and in the same direction and aspect of the bone; (6) transposing these transplants, so that the upper will be below and the lower above; (7) wedging each firmly in its new position by taps of a mallet; (8) suturing periosteum and soft parts.

The result is that a substantial bridge of bone connects the fragments, having its center at their junction. No bony defect remains. The transplants are of the same nature and thickness as the bony bed in which they lie. The fragments are not separated from connection with the soft parts more than is necessary for replacement in proper position. No foreign body plugs the medullary cavity. The fracture is practically converted into a recent comminuted fracture in which the fragments are favorably disposed and the parts aseptic. The method is peculiarly adapted to those not infrequent cases of non-union of the tibia in which the fibula is united and the fragments in good line.

The author reports such a case with illustrations in which solid bony union was secured by this method in six or eight weeks, after failure of resection, and resection with plating. In this case the larger transplant was  $2\frac{3}{4} \times \frac{5}{8}$  inches, and the smaller  $1\frac{1}{2} \times \frac{5}{8}$  inches.

**Jokoi: Experimental Contribution to the New Formation of Bone by Injection or Implantation of Emulsion of Periosteum.** *Deutsche Ztschr. f. Chir.*, 1912, cxviii, Sept.

By Surg., Gynec. & Obst.

Experiments on rabbits and dogs. (1) Implantation of pieces of periosteum taken from the animal itself and placed in the extremity subcutaneously or intramuscularly. (2) Implantation of periosteum upon other animals of the same species. (3) Some implantation upon animals of another species. (4) Injection of an emulsion of blood and periosteum subcutaneously. (5) Injection of periosteum emulsion and 10 to 20 drops of a 1 per cent fibrin solution, intramuscularly. (6) Injection of the cambium layer scraped from the periosteum.

Summary of experiments: (1) Autoplastic implantation or injection of periosteal emulsion produced marked new formation of bone in 6 to 10 cases. (2) Homoplastic implantation or injection may produce new formation of bone. It does not occur as regular nor as strong as in autoplastic implantation. (3) Heteroplastic implantation or injection gives negative results. (4) The injection of blood does not seem to stimulate the osteoblastic activity of transplanted periosteum. (5) Simultaneously injected fibrin seems to stimulate the cambium cells of the transplanted periosteum to increased bone formation. (6) Injection of cambium layer is negative. (7) Bony particles which have been implanted accidentally are usually taken up by lacunar absorption. E. C. RIEBEL.



## ORTHOPEDIC SURGERY

## DISEASES AND DEFORMITIES OF THE SPINE

**Fisher: Injuries of the Spinal Column, with and without Fracture and Dislocation.** *J. Am. M. Ass.*, 1912, lix, 1501. By Surg., Gynec. & Obst.

Fisher says sensory disturbances are the most immediate indicative symptoms of either possibility of operation or probability of recovery after operation. He considers indications for operation thus:

1. With an irregular line of sensory disturbances, i. e., loss of sensation on one side high up and on the other side low down, even with motor and bladder paralysis and possibly complete loss of reflexes, there is very likely extraspinal hæmorrhage rather than hæmorrhage into the cord substance; hence favorable operative result is probable.

2. With incomplete disturbance of sensation, either unequal on one side or with sensation lessened without a complete loss.

3. Cases which, in addition to the latter, show incomplete though rather extreme degree of loss of motion, even if vesical paralysis is present, provided an irregular distribution of motor paralysis exists.

Sensation at time of injury and a few days after is of greatest importance in determining for or against operation. If sensation improves for a day or two, then begins to decline or remains stationary, operation should be done at that time, if at all.

He cites Allen's experimental evidence that longitudinal incision does not impair the cord function, but does relieve œdema often accompanying fractured spine. Shock to the spinal column transmitted to spinal cord can throw out the function of the spinal cord, presenting symptoms at onset similar to those of absolute lesion of spinal cord.

When there is an absolute loss of sensation, with the usual complex of loss of reflexes and paralysis of rectum and bladder and the well-defined transverse line of demarcation of anæsthesia, the case is unfavorable for operation. Any variation from this condition indicates possibility of a good result from operation. After paralysis has existed several months, operation is almost futile.

With slight chance of recovery he favors operation, because in the hands of a skillful surgeon there should not be any special danger in the operation itself.

L. G. DWAN.

**Jourdan and Oeconomos: Sarcoma of the Posterior Arch of the Atlas; Extirpation; Recovery** (Sarcome de l'arc postérieur de l'atlas; extirpation; guérison). *Montpellier Méd.*, 1912, xxxv, Oct.

By Journal de Chirurgie.

Jourdan and Oeconomos report the case of a man 35 years of age who entered the hospital because of an ulcerated tumor on the left side of the neck. The beginning of the affection dates back nine or ten

years. At that time the patient observed the presence of a small tumor in the left lateral region of the neck. Little by little it increased in size until 4 years ago, since which time it has remained stationary. Six or eight months ago, however, the patient, wishing to relieve himself of the tumor, applied a cosmetic salve. In four or five days an ulcer appeared. At the end of two months, the center of the tumor was occupied by a necrotic zone of considerable size. A copious hæmorrhage made the patient decide to change his therapy; but by this time the tumor had considerably increased in size; it had a base of implantation 5 cm. by 7 cm. in diameter, and supported an ulcerated area as large as a 5-franc piece. At times it was painful, when the pain also radiated to the head.

On palpation it was found that the limits of the tumor were clearly marked anteriorly and superiorly, but posteriorly and inferiorly its outlines were lost in the cellular tissue. In the region of its upper border one could feel a much harder portion, which adhered to the occipital bone. The tumor itself was soft, elastic, and appeared pseudofluctuant. It was not movable, its adherence to the bony layers being complete. There was no glandular involvement.

Anæsthesia was obtained by ether, given by the drop method. An incision was made around the circumference of the tumor. Muscular adhesions were very numerous. The larger portion of the sterno-cleido-mastoid, of the trapezius, and of the vertebral muscles was cut and resected. Then it was perceived that the tumor had arisen from the left branch of the posterior arch of the atlas. It was removed with difficulty. The arch of the atlas was completely destroyed. A few bony fragments which remained were resected with the gouge forceps. This operation was extended as far as the healthy tissue, which was not reached before the spinal apophysis and a good portion of the articular mass on the left had been removed. In the course of this process of cleansing out, the vertebral artery was injured. A self-adjusting forceps was therefore left in place. The bulb lay bare in the pit of the wound. Hæmorrhage was arrested by careful hæmostasis. The wound was not closed, but was tamponed with gauze. The superficial layers of the dressings were soaked with alcohol, which was applied very gradually. Normal salt was infused directly because the operation had been very bloody.

A half hour after the operation the patient became suddenly pale and respiration ceased. The pulse was hardly noticeable. Artificial respiration was employed and the patient given an injection of 5 cc. of camphorated oil. Artificial respiration had to be continued for more than 20 minutes, respiration ceasing whenever the maneuver was interrupted. Little by little the pulse became perceptible again, respiration returned, and the patient revived.

The patient left the hospital recovered. When he



was seen again at the end of July he was in excellent condition.

Examination of the specimen proved it to be a round-celled sarcoma. J. DUMONT.

**Frölich: Coxa Vara; Its Relation to Fractures and Epiphyseal Separations of the Upper End of the Femur** (*La coxa vara; ses rapports avec les fractures et les décollements épiphysaires de l'extrémité supérieure du fémur*). 25th Cong. d. l'Ass. fran. d. Chir., Oct., 1912. By Journal de Chirurgie.

Coxa vara, coxa vara of adolescence or static coxa vara, is an uncommon affection of the hip occurring at puberty. It is characterized, anatomically, by an upward and backward slipping of the femoral head at the level of the epiphyseal cartilage. Clinically, it is manifested by limping and by adduction and rotation of the lower limb. It is unilateral or bilateral. Symptomatic coxa vara is more frequent than coxa vara of adolescence in a proportion of ten to one. The examination of specimens and radiographic studies have shown that in adolescence the seat of the incurvation is near the femoral head at the level of the union of the neck and the epiphyseal cartilage. This constitutes cervical coxa vara. In the other varieties of incurvation of the neck that occur at all ages, and in a number of localized or generalized bone diseases, the collapse of the neck takes place at the level of its trochanteric implantation. These are known as trochanteric coxa vara. There are thus two forms: coxa vara of adolescence or cervical coxa vara, and symptomatic or trochanteric coxa vara.

The essential form is the result of an overloading of the femoral neck at the time of adolescence or of the insufficiency of the epiphyseal cartilage. The cause of this deficiency has not been positively determined. It may be an attenuated, abandoned infection. The effects of the overloading and gliding downward and backward of a femoral head are at times accelerated by injury, and some have spoken of spontaneous fracture. The lesion lasts one, two, or three years. The following functional disturbances are present: limping and an increasing collapse of the neck, then there follows a period of rest, then comes a spontaneous regression of the difficulties of gait and an increase in the amplitude of motion. The prognosis is good. The aim of treatment is to withdraw from the femoral head the body weight and to correct its bends. Rest in bed, continuous traction, removal of the body weight from the articulation, sitting posture, with spread limbs upon low stools, massage, mechanical therapy—all are measures of therapeutic value. When the disease is fully developed, forcible correction with rupture or division of the adductors improves the condition considerably. When the osseous deformities are marked and interfere very much with walking and with the play of articulation, a subtrochanteric osteotomy is indicated. Resection of the hip and shaping of the head and of the neck and vertical osteotomy of the great trochanter are only exceptionally indicated.

In the treatment of symptomatic coxa vara, the same principles are observed if the primary osseous affection does not contraindicate intervention. Symptomatic coxa vara is met in congenital malformations, rachitis, tuberculous, osteomyelitis, fibrous osteitis, arthritis deformans, osteomalacia—all these forms of coxa vara present symptoms that allow the different types to be differentiated from each other and from essential coxa vara. There is one exception: though there can be no confusion between fracture of the neck of the femur and coxa vara of adolescence, coxa vara of adolescence and traumatic epiphyseal separation cannot be distinguished, either anatomically or clinically. In both cases we are dealing with an epiphyseal separation, spontaneous in one case and traumatic in the other. The difference is only an etiological one.

Kirmisson states that fractures of the neck of the femur in children are of recent recognition. This scientific conquest is due exclusively to radiography. The lesion has been best studied by Witman. Kirmisson has had five cases. In children, fractures of the surgical neck are intra- and extracapsular. Kocher designates them as subcapital and intertrochanteric. In children we also see incomplete (greenstick) fractures and impacted fractures. According to Poland, epiphyseal separation of the head of the femur cannot occur before the age of four years, because the head of the bone is not osseous before that age. The condition is usually observed in adolescence. Treatment of this form of traumatic coxa vara is prophylactic and curative. One treats the fracture and makes use of continuous extension in moderate abduction or of forcible reduction under chloroform, with or without pegging; or resorts to operative procedures. Operative methods cannot be often utilized. Curative treatment consists of operation either upon the articulation or at a distance. There are different well known forms of osteotomies. For Kirmisson, subtrochanteric osteotomy is the method of choice. Resection of the head and pegging of the neck are exceptional procedures.

Willems distinguishes a cervical coxa vara and trochanteric coxa vara. He would prefer to designate them as juxtacapital and juxtatrochanteric. One is not justified in speaking of a tuberculous coxa vara any more than he would be in speaking of tuberculous clubfoot. It must be borne in mind that symptomatic coxa vara is usually either rachitic or traumatic. To avoid overlooking rachitic coxa vara one should make use of radiography in all cases of beginning coxalgia, and likewise, to avoid overlooking fractures of the neck in all hip injuries radiography should be used. In them we will always be able to use the preventive treatment of coxa vara by placing the limb in marked abduction (45° at least). If the case is seen too late, and if union has taken place in coxa vara, a bloody operation only is useful; and subtrochanteric linear osteotomy is the operation of choice.

Gangolphe states that essential coxa vara of



adolescence is not of traumatic origin. It is characterized by an initial softening of the neck of the femur, associated with a gliding and at times a juxta-epiphyseal separation. These two elements, flexion and displacement of the epiphysis, are synchronous. Flexion must be mentioned first because it is the cause of the diminution of the angle of the femur, and this is responsible for many of the clinical symptoms. Gangolphe would define coxa vara of adolescence as an affection characterized by an initial softening of the neck of the femur and the possible, but not essential, appearance of a fracture with juxta-epiphyseal separation. He presents pictures to demonstrate his point of view. He does not look upon traumatism as an etiological factor. In addition to the clinical symptoms indicated by Frölich, Gangolphe notes the absence of lordosis. The diagnosis calls for bilateral radiography. There is no necessity for an open operation.

Nové-Josserand has had 6 cases of rachitic coxa vara. In 3 patients of 5, 6, and 10 years old, respectively, the deformity remained stationary or became worse. In one case, attempt to cure by forced abduction was ineffective. In three other much younger patients the deformity corrected itself almost completely within a few months. In these three patients, treatment by forced abduction seems to have led to correction by displacing the epiphyseal fragment forward upon the femoral neck. He concludes that the spontaneous correction of rachitic coxa vara is possible and even frequent before the age of 5 year; that this correction seems to be due to growth owing to the oblique disposition of the epiphyseal cartilage; and that treatment by forced abduction may aid correction, but it is not yet positively determined that it does so.

Savriaud believes that, to avoid obscuring a question which is clear in itself, we must not give the name coxa vara to all weaknesses of the femoral neck irrespective of cause. The name must be reserved for the disease described by Müller, an affection which recent works seems only to have confused. In the experience of the author (12 cases), coxa vara is a frequent affection. It is almost as frequent as genu valgum of adolescence, which malformation is self-evident. One of the characteristics of spontaneous coxa vara is that it follows a regular course and always terminates by spontaneous cure. Such obtained in all of the author's cases. Outside of rest, which is valuable especially during the painful period, Savriaud does not in a general way employ the various methods of treatment suggested. He energetically combats the opinion of many orthopedists who see fractures and epiphyseal separation in all cases of coxa vara. No doubt spontaneous fracture and traumatic fractures are met in coxa vara and constitute the first episode of the disease, but these cases are rare when we consider the number of cases of coxa vara which evolve without the slightest indication of traumatism. What is usually observed are false fractures, that is, errors of interpretation made by

those who believe that they can make a diagnosis by simply looking at a radiographic picture. There is no difference between the clear space given by the layer of cartilage and the clear space given by a solution of continuity. Numerous mistakes have been made which could have been avoided by careful study of the history and prolonged observation of the patients.

Mouchet believes that the term coxa vara is often misused. It ought to be reserved for the following varieties: congenital, rachitic of early childhood, essential or traumatic of adolescence. In two cases of essential coxa vara he noticed an intermittent subluxation of the femoral head which occurred during flexion of the thigh. He believes that the importance of a preliminary traumatism in the production of coxa vara has been exaggerated. Often the traumatism is not the cause of the coxa vara. It is the outcome of the pre-existing trophic alteration of the neck.

Gourdon has had 15 cases of coxa vara. Two were essential; the backward and downward slipping of the head of the femur was apparent upon the radiographs, and had occurred without any traumatism upon the influence of the body weight. The two patients, 14 and 16 years of age, had an exaggerated physical development for their age. One was hypothyroidic. The 13 other cases were symptomatic, coexisting with the following affections: coxalgia, fracture of the neck, rachitis, and congenital luxation of the hip. Cases of rachitic coxa vara in children recover under the influence of rest and medical treatment. We must establish a distinction between the anatomical type of coxa vara observed in congenital hip dislocations, according to whether the deformity of the femoral neck has taken place previous to or after reduction. Before reduction the coxa vara is trochanteric, with the head of the femur displaced upward. After intervention the coxa vara is also trochanteric in type, but the neck is crushed and one notices an almost complete collapse of the head.

Barbarin had a case of essential coxa vara in a young man of 15 who was being treated for scoliosis. Deviation of the vertebral column was absent; marked atrophy of the gluteal muscle, external rotation, and limping led the author to think that the case was one of coxa vara adolescens. Radiography confirmed this diagnosis. Massage, electricity, and orthopedic gymnastics brought on a cure at the end of a year. This young man has never had pain. Barbarin believes that in the majority of cases of essential coxa vara, whatever may be the intensity of the symptoms or the importance of the limping, one should wait a long time before intervening surgically. In these cases surgical intervention should be exceptional. It is often inefficient. Many cases of osseous rachitis with a limping and waddling gait are neither congenital luxation nor coxa vara, but as has been well said by Frölich, incurvations of the femoral diaphysis with external convexity. Radiographs dispel all doubts. In congenital luxa-



tion there is a possibility of a traumatic coxa vara following reduction, but in a certain number of cases, previous to any attempt at reduction there is a tendency toward inflexion of the neck, which explains the persistence of slight limping with the head in place, in good rotation, and in a cavity of sufficient depth. He has seen a case of traumatic coxa vara in very peculiar conditions. The child was brought to him for marked limping. Clinical examination of the hip proved negative. There was no swelling, no luxation. The parents recalled that the child fell upon his back at the age of three months. Radiographs showed that the head and neck of the femur were completely displaced downward and inward. Perhaps in this case can be found factors throwing some light on the etiology of coxa vara.

Martin du Pan relates observations upon a child 7 years of age who, in falling from a second story, sustained an intertrochanteric fracture of the neck of the femur. He recovered from this fracture with a good functional result. Two months later, in another fall, he sustained a fracture of the same hip in the epiphyseal line. The same treatment was applied, followed by an almost complete ankylosis of the coxofemoral articulation. Subtrochanteric osteotomy practiced six months later restored movements of articulation, and since then the patient has been able to walk without limping. The X-ray picture showed that there had been sustained a new epiphysiolysis with pseudarthrosis. He does not think that in children under the age of 18 months any important information can be had from radiography of the hip. He has observed one case of essential coxa vara following an attack of scarlet fever.

Judet communicates a series of four cases which have the advantage of showing the question of coxa vara under different aspects. A boy 13 years of age had a fall from a ladder, striking upon the external surface of the hip, his weight coming principally upon the great trochanter. The X-ray picture showed a transverse fracture of the middle portion of the neck. The displacement was slight. For two months the fracture was treated by continuous extension by means of adhesive strips. On the eightieth day the patient was allowed to walk. There was no shortening, no limping. The radiograph showed consolidation of the neck, normal shape and normal angle. This therapeutic result shows that these fractures of the femoral neck do not in themselves give a bad prognosis if they are treated from the beginning.

The second observation shows the evolution of a non-diagnosed fracture. The patient, owing to a misstep, had a violent fall upon the hip. There followed acute pain and inability to walk. Rest in bed during two weeks. Walking was then allowed, but it was difficult though improved; limping persisted. Three months after the accident there was 1 cm. of shortening; five months after there was a typical coxa vara, with irreducible external rotation and

abduction and 2 cm. of shortening. The radiograph showed the collapse of the neck, which had become horizontal, and the correlative ascension of the great trochanter. In the external portion of the neck in the intertrochanteric region a dark line could be seen, the remains of an old fracture line. Signs of decalcification of the internal segment of the neck were present. Treatment under anæsthesia. External rotation was corrected and abduction increased. Immobilization for one month in a plaster of paris cast, retaining the same attitude as is seen in the second step in the treatment of congenital luxation of the hip (adduction, internal rotation). At the end of a month, removal of the apparatus. The correction of the vicious attitude was maintained, but walking was not allowed until the end of six months. In short, this case was an overlooked intertrochanteric fracture, giving rise to a deformity which, from the anatomical standpoint, was nothing other than the habitual deformity of viciously consolidated fractures of the neck of the femur.

The third observation showed an essential coxa vara, the evolution of which was aggravated by traumatism. A healthy young girl suddenly developed pain and limping in the left hip. Fears of coxalgia were entertained. A few months later, following a misstep, the patient fell upon her hip. She suffered severe pain. Rest in bed 15 days. Aggravation of limping, vicious attitude (flexion, adduction, outward rotation, marked rigidity). The radiograph showed the collapsed neck almost horizontal, and a linear shadow, probably an old fracture line, 1 cm. external to the epiphyseal cartilage.

Observation four: A boy six years of age in good health developed, after diphtheria, bilateral limping, simulating very closely the waddling gait of bilateral congenital luxation; never any traumatism nor any pain. At the age of 12 years, one noticed that the great trochanter was 3 cm. above Nelaton's line at the right side, and 5 cm. at the left. The radiograph showed on the right side a horizontal neck with a decalcified internal portion. The head was in its place in the cotyloid cavity. On the left side the neck had collapsed to an acute angle ( $80^{\circ}$ ); the head was as on the right side, at its place. In this case, we were dealing with a bilateral collapse of the femoral neck, due to an as yet unknown influence, perhaps infectious. We cannot say that these cases are traumatic in origin.

Lamy calls attention to a particular deformity of the upper extremity of the femur accompanying a chronic arthritis simulating coxalgia. The most constant characteristic of this affection in 30 studied cases was a subacute arthritis, always recovering without complications and with full mobility; outside abduction, which is slightly limited; no swelling; no abscess; no enlarged inguinal glands; but a hard voluminous head and an upward displacement of the great trochanter; no muscular atrophy; and no trophic disturbance as to length. The radiograph showed a moderate degree of coxa vara, oscillating



between 90° and 120°. The neck was very much thickened in its vertical diameter; the epiphysis was flattened and relegated to the superior external part of the head, and often fragmented at the onset of the illness. No decalcification. Reaction to tuberculin, negative. Some cases have been variously interpreted — beginning osteomyelitis, arthritis de-

formans, tuberculosis. The author believes that there is a clinical and radiographic entity that it is important to individualize, because if we are dealing with a coxalgia we immobilize the patient, while in these cases, as has been demonstrated (by Calvé, in 30 cases), the patient is immediately encouraged to walk.  
J. DUMONT.

## SURGERY OF THE NERVOUS SYSTEM

**Elsberg: Surgery of Intramedullary Affections of the Spinal Cord; Anatomical Basis and Technique.** *J. Am. M. Ass.*, 1911, lix, 1532.  
By Surg., Gynec. & Obst.

Elsberg observed a number of lesions within the cord substance amenable to surgical treatment. He believes that in intramedullary affections—tumors, cysts, bullets, etc.—with proper technique it is feasible to incise the cord substance. He cites instances of isolated cases where surgical measures have been instituted for relief of affections within the cord substance, and presents a technique based on anatomic consideration of the cord anatomy.

He advocates the posterior columns as the most favorable for incision, because of their anatomic position, physiologic character, and the ease with which they can be exposed. Aspiration of the cord for localized collections of fluid—syringomyelia, hæmatomyelia, and cysts—can be done with entire safety provided a fine needle be used and care be taken not to injure the small vessels which enter the cord through the posterior median septum from the pia-arachnoid.

*Technique for incision of the cord.* A complete laminectomy, i. e., removal of at least three spinous processes and laminae, is always necessary for thorough exploration. After the dura is incised the pia-arachnoid is incised separately and raised with forceps. In the proper part of the posterior column an incision 0.5 cm. long is made, carefully deepened, and enlarged in the axis of the cord by means of a blunt instrument.

In case of intramedullary tumors, incision is made in the most bulging part of the cord and the tumor exposed. No attempt is made to remove it unless it is superficial and small. The growth should be left to extrude, and removed at a later operation. In case of infiltrating growth, the incision into the cord may be of considerable length so as to obtain maximum decompression effect.  
L. G. DWAN.

**Leriche: Some New Indications for Posterior Radicotomy** (Quelques indications nouvelles de la radicotomie postérieure). *Lyon Chir.*, 1912, viii, 434.  
By Journal de Chirurgie.

Posterior radicotomy, a "difficult but not murderous operation," so far has been employed only in the spasmodic paraplegias, the gastric crises of tabes, and certain unbearable neuralgic conditions. Leriche thinks that it is permissible to extend the sphere of this procedure to certain obstinate peripheral lesions, of trophic or secretory order, "which reveal themselves to analysis as radiculoganglionic syndromes." He cites among others the following:

(1) The intercostal zone, for which the radicular origin has to-day been well established, in certain obstinate, recurring and painful disorders which make surgical treatment legitimate.

(2) Perforating plantar disease, when all peripheral operations have failed and when radicular origin may be assumed; in which case the fifth lumbar and the first sacral root of the corresponding side should be severed.

(3) Certain painful crises of obstinate hyperchlorhydria, independent of any gastric or duodenal ulcer; radicotomy of the fifth to tenth dorsal roots will act upon the sympathetic nerves of the stomach, which are sensitive and above all secretory; its effect approaching that of the elongation of the solar plexus, which is proposed by Jaboulay.

These suggestions so far have been purely theoretical. However, in one case of obstinate herpes, Leriche has cut the fourth and fifth dorsal roots of the corresponding side. The result was one of surprisingly rapid improvement; in 48 hours, the pains had disappeared, the vesicles were withered and desiccated, and the skin, which had been infiltrated and painful, had resumed normal sensibility and appearance.  
CH. LENORMANT.



## DISEASES AND SURGERY OF THE SKIN AND APPENDAGES

**Morestin: Voluminous Angioma of the Face Treated by Means of Fixing with Formalin After Ligation of the External Carotid and the Facial Vein** (Volumineux angiome de la face traité par la fixation au formol après ligation de carotide externe et de la veine faciale). *Bull. et mém. Soc. d. Chir.*, xxxviii, 1208.

By Journal de Chirurgie.

Morestin presents a young girl 19 years old who has recovered from a voluminous angioma which occupied nearly the whole right half of the face.

After ligation of the external carotid and the corresponding facial vein he made, all about the tumor, a series of punctures, tracing a crown, and injected each with a drop or two of a formalin preparation in one third dilution (one third alcohol 90 per cent pure, one third glycerin, and one third formaldehyde). A second concentric circle more nearly enclosed the tumor. Finally Morestin injected into the body of the tumor a certain quantity of the fixing agent, a drop at a time, until altogether one cc. had been injected.

Under the influence of these injections, the tumor became solid and transformed into a hard mass. To complete the cure it was necessary to make some supplementary injections during the following days (two sittings, at each of which he injected 12 cc. of formalin in one third solution). To-day, after six months, the angioma has entirely disappeared, while the face is symmetrical and presents an altogether normal appearance, without visible scars.

Among the numerous substances which lend themselves to employment as coagulants and sclerotics in the treatment of angiomas, formalin, which has rarely been used in the treatment of these tumors, offers great advantages. It is an admirable fixing agent, capable of acting on the tissues by gradual inhibition. It is remarkably powerful, and for all that not very toxic and very easily handled.

It should be admitted, however, that in the present case its action was very much facilitated by the relative ischæmia and stagnation of the blood which resulted from the ligation of the external carotid and the facial vein.

J. DUMONT.

## MISCELLANEOUS

## CLINICAL ENTITIES—TUMORS, ULCERS, ABSCESSSES, ETC.

**Craster: Conditions Governing the Growth of Displaced Normal Tissue.** *J. Exp. Medicine*, 1912, xvi, 493.

By Surg., Gynec. & Obst.

Craster has made an incomplete series of animal experiments bearing upon the factors which cause retardation of growth and disappearance of normal tissue when displaced into an unusual environment. It is known that tumor cells do grow under just such conditions. The former problem has, no doubt, an indirect bearing on the latter one.

First series: Transplantations of pieces of skin were made from animal to animal (homogeneous transplantation). It is known that successive transplantations of tumors increase the ease of their growth. This was not found to hold true for normal tissue, as necrosis and disappearance occurred in all cases after three or four removals.

Second series: Fragments of testis used — transplanted under skin of axilla. Result same, but more rapid.

Third series was for determining the receptivity of the host after successive implantations. It was found that later grafts degenerated more rapidly than earlier ones.

Fourth series: To determine the effect of physical conditions. Pieces of skin were buried under the skin, epidermal side out. After 24, 48, and 60 hours, and 4, 6, 8, and 12 days, the overlying skin was cut away and the graft sutured to the skin edges. Only those buried not more than 24 hours grew.

Fifth series: Same experiment, save that the skin was not entirely detached and surrounding skin was slid over it and sutured. These pieces grew, when replaced, up to the 12th day of burial.

Sixth series: Pedunculated flaps were buried within the abdominal wall. The limit of vitality was 16 days.

JAMES F. CHURCHILL.

**Liek: Treatment of Imminent Traumatic Gangrene of the Extremities.** *Deutsche med. Wchnschr.*, 1912, xxxviii.

By Surg., Gynec. & Obst.

Application of the method of Noesske, consisting of deep incision to combat venous stasis in threatening gangrene. Noesske applied suction subsequent to the incision. Liek states that the procedure of incisions has long been employed in preventing gangrene of pedicled flaps. Repeated scarification relieves the congestion, and the flap lives. He reports the case of a student whose right ear was almost severed during rapier fencing. Exact suture and 15 superficial incisions placed radially improved the appearance of the ear somewhat. Scarifications repeated the next day and the day after. At the end of three days appearance of ear was normal. The author was similarly successful in saving the fingers in two other cases. He recommends scarification rather than deep incisions in these finger cases, as subsequent adhesions may lead to complaints. Suction was not employed. If, however, the function of the fingers presumably will not return, Liek counsels primary amputation. Tendon suture should be postponed until the life of the finger is assured.

E. C. RIEBEL.



**Finney: The Surgical Aspect of Fat.** *Boston M. & S. J.*, 1912, clxvii, 495. By Surg., Gynec. & Obst.

In the course of recording several unique cases of his own, Finney took occasion to review the whole subject of fatty conditions in the body, finding that lipomata may occur in any situation, even in the heart and brain. His summary of Marchand's and Verebely's work on the healing of fat sheds light on a subject hitherto neglected. The question of fat embolism is also discussed, especially its occurrence following fracture and crushing of bone, when the transmission of the embolus is usually directly into the blood stream.

Under the general head of Dercum's disease, *adiposa dolorosa*, Finney was inclined to include the two following cases: A stout man who had suffered from abdominal distress after meals for 5 years. History and examination negative. At operation November, 1909, the mesentery appeared everywhere thicker and fatter than normal. This was particularly noticeable in the mesentery of the transverse colon and omentum, especially on the right half of the body, producing the effect of a marked lipomatosis, which ended abruptly just to the left of the midline, beyond which point the fatty development was about normal. The abdomen was closed without doing anything. Since operation the patient has had the same general symptoms as before, but not quite so severe.

In another similar case, also that of a man who had suffered from pain in the epigastrium for a couple of years, a condition analogous to that of the first case was found in the abdomen. The fatty deposits, though, seemed even more extensive, involving not only the right side of the omentum but the mesentery of the large and small bowel as well. There was no evidence of recent or old ulcer on the gastric or duodenal side. The involved part of the omentum was removed, microscopical examination showing it to be for the most part pure fat, with a few scattered areas of old hemorrhage.

Finney reports in detail two other unusual cases in which resection of the intestine was necessitated by a purely fatty condition. The article concludes with a discussion of *lipoma arborescens*.

BERTRAM M. BERNHEIM.

#### SERA, VACCINES, AND FERMENTS

**Graff and Ranzi: The Problem of Immunization Against Malignant Tumors.** *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 278.

By Surg., Gynec. & Obst.

Experiments in active immunization against carcinoma and sarcoma. The authors refer to studies in autoimmunization made in 1910. Dungern heats carcinoma material to 56° C. before injection. Rösing reports the same success by this method in sarcoma. Coca (Manila) used carbolyzed material. Delbert did not kill the carcinoma cells and reinjected them subcutaneously immediately after extirpation, after trituration with saline solution. Graff

and Ranzi repeated this later method upon a woman 46 years of age with mammary cancer (adenocarcinoma). The growth and glands had first been removed in a radical operation. Recurrence after six months. The removal of the recurrence was accompanied by the injection of some of the removed material into the arm. No reaction occurred at the point of injection. Two months later, a tumefaction appeared at the site of injection and a recurrence at point of operation. The tumefaction on the arm was extirpated and found to be adenocarcinoma. The patient died one month later.

Animal experiments were carried on to answer two questions: (1) Is immunization possible with dead tissue? (2) Will a tumor, removed from an animal and reinjected, continue to grow? Answer 1. Chemically prepared material proved inert. Animals injected with living material seemed prior to inoculation to possess some degree of immunity. Injections of blood, embryonic tissue, spleen, liver, all proved negative. Answer 2. The inoculated tumor grew in the majority of the experiments. The experimenters come to the conclusion that injection of tumor material without previous preparation is not justifiable.

E. C. RIEBEL.

**Gironi: Leucocytosis and the Rivalta Serum-Blood Reaction.** *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 227. By Surg., Gynec. & Obst.

Gironi endeavors to establish a parallel between Rivalta's reaction and the degree of leucocytosis in pathological processes for prognostic purposes. He finds that the intensity of Rivalta's reaction is directly proportional to the number of circulating leucocytes and inversely proportional to the ratio between white and red blood corpuscles. He describes Rivalta's reaction as follows: Several cc. of blood are taken from a vein; part of this is set aside to obtain the serum. Two solutions are made. No. 1 contains 1 drop of a saturated solution of sodium carbonate to 100 cc. of distilled water; No. 2 contains 2 drops of glacial acetic acid in 100 cc. of distilled water. Solution 1 is used to dilute the blood and also the serum (1:100). A rod  $\frac{1}{2}$  cm. in diameter is dipped into the dilution and the adherent drop allowed to fall into the acetic acid solution. A distinct white ring is formed. Successive dilutions with 100 cc. of  $\text{Na}_2\text{CO}_3$  solutions are made, and the test continued until the white ring is no longer visible. This ends the reaction. The dilution at which the ring was still visible is used as indicator. For example, if the ring is visible in a dilution of 1:1000 and invisible beyond this, 1:1000 will be the degree of the reaction. The procedure should be carried out in a dark room. The precipitating substances are, according to Rivalta, globulines. The blood of normal individuals contains these globulines in constant amounts; these fluctuate, in the terms of Rivalta, between 400 and 600. Pathological processes change the amount. The globulines decrease in grave processes when resistance is low; when resistance is high they



increase, and may reach the enormous value of 2200. A certain analogy exists between this precipitating substance and the antibodies. The reaction is not confined to infectious processes. Gironi considers Rivalta's reaction a great adjuvant to a correct prognosis.

E. C. RIEBEL.

**Jobling and Bull: Studies on Ferment Action. A Specific Immune Lipase.** *J. Exp. Medicine*, 1912, xvi, 483.

By Surg., Gynec. & Obst.

It has been demonstrated that there is a close parallelism between agglutinative, hæmolytic and lipolytic substances. Further work has proven that sera of animals immunized to foreign cells have an increased lipolytic power, but this increase in serum lipase has not heretofore been shown to be specific. It is this point that the writers take up.

The first step was to secure a basis of comparison for the non-specific lipolytic activity of the serum of animals before and after treatment with foreign corpuscles. The same animal (rabbit) was used throughout and hen corpuscles were used for immunization. The next effort was to determine if possible, whether this lipase was in any way specific. This was done by comparing the lipolytic action of an immune serum upon the specific corpuscles (hen) and upon corpuscles obtained from other sources (human, rabbit, and guinea pig). The results showed that the lipolytic action was greater for the specific corpuscles, and therefore it may be concluded that the lipid acts as a specific antigen. Descriptions of technique are given.

The lipolytic action was expressed in terms of n/10 sodium hydroxide, after titrating against phenolphthalein. It is of interest to note that the acids formed by the ferment action were shown to be fatty acids.

Conclusions: 1. Erythrocytes have definite lipoidal constituents peculiar to the species. 2. Certain lipoids and lipoidal combinations act as specific antigens. 3. The increase in serum lipase which occurs upon immunization of animals to foreign cells is, at least in part, specific. 4. This specific lipase plays, no doubt, an important part in specific serum hæmolytic.

JAMES F. CHURCHILL.

#### BLOOD AND LYMPH VESSELS

**Rosanow: Lymphangioplasty in Elephantiasis.** *Arch. f. klin. Chir.*, 1912, xcix.

By Surg., Gynec. & Obst.

After reviewing the older methods in dealing with this obstinate trouble, such as excision of parts and resections and ligations of veins and arteries, the author enters into a discussion of the method of Handley, published 1908, consisting in making new lymphatic channels to produce better lymph drainage. Handley used silk or silkworm threads. Lanz improved upon this method by the formation of communications of subcutaneous and deep muscular and periosteal lymph channels. Lanz fenestrated

the fascia lata and passed flaps of the fascia down to muscles and periosteum. Oppel extended this method to the tibial and crural points. Rosanow shows by a case in which he obtained a good and apparently lasting result that triangular and rhomboid flaps may advantageously bring about a drainage and cure of elephantiasis. He adds excision of exuberant skin.

CARL BECK.

**Dobrowolskaja: Technique of Suture of Vessels of Small Caliber.** *Deutsche Ztschr. f. Chir.*, 1912, cxix.

By Surg., Gynec. & Obst.

A report of experiments with dogs (47 cases) for suturing vessels of small caliber. The direction of the line of suture is changed from transverse into oblique, to avoid the narrowing of the lumen after the suture is performed. Indented, flap-shaped incisions and circular ones with an extra longitudinal incision on both sides are other modes of operation. The indented incision is the simplest. It is made triangular to the middle of the vessel, one end is turned 90°, the protruding points are then sutured on each side and pulled away from each other, thus approximating the indentation triangles, which are now sutured with continuous suture, intima to intima. The lumina of the vessels are enlarged by this method of incision, and the traction sutures facilitate the uniting of the two ends, as the danger of catching the opposite wall with the needle is avoided. The enlargement of the vessel at the suture point shows a tendency to disappear after a while.

In the experiments with veins, two needles are inserted transversely, one above the other and 1½–2 mm. apart; the vessel is then cut and both needles pulled through together. The portion of the thread which is in the lumen is then pulled up from both ends with crochet needles and cut. The two sutures thus obtained on each end are then pulled to both sides, and the ends approximated and sutured with continuous or interrupted sutures. Human hair or silk 00 and straight needles are used. Complicated incisions and sutures apparently do not endanger the vessels. FREDERICK G. DYAS.

**Boothby: Note on the Transplantation of Fresh Venous Segments.** *Ann. Surg.*, Phila., 1912, lvi, 409.

By Surg., Gynec. & Obst.

The author describes a technique for the introduction of stay sutures in the vein before it is removed for transplantation. The vein is freed for a distance of two inches and ligated at both ends. Close to the upper ligature the vein is grasped by a smooth forceps and a small nich is made close to where the forceps grasps the vein. A stay suture is then introduced from without in and emerging through this nich. In all, six stay sutures are placed by the repetition of this maneuver, and the vein segment is then removed for transplantation, each stay suture of the vein being used to anchor it to the new vessel. Circular suture completes the operation.

V. C. DAVID.



**Carrel: Results of the Permanent Intubation of the Thoracic Aorta.** *Surg., Gynec. & Obst.*, 1912, xv, 245.  
By Surg., Gynec. & Obst.

In the course of experiments made a few years ago, the author succeeded (the experiments were made with a view of finding a radical treatment for intrathoracic aneurysms) in grafting onto the descending aorta of a dog a segment of vein preserved in cold storage. The animal remained in good condition, and died two years afterwards of a myelitis which was then epidemic among dogs.

In the actual conditions of surgery, the resection of the sac and the graft of a vascular segment on the thoracic aorta would be a complicated and dangerous operation. It would be simpler to insert into the sac a gold tube through which the blood could flow. The thoracic aortas of seven animals were intubated with a glass tube, three with an aluminum tube, and one with a gold-plated aluminum tube. These experiments have shown a new fact: The arterial blood flowed through a glass tube nine or ten millimeters in diameter during periods varying from five to ninety-seven days. No deposit of fibrin on the wall of the tube occurred. Sudden occlusion of the vessel or of the tube took place following a laceration of the aortic wall by the roughly finished edges of the tube.

The permanent intubation of a large artery is a simple operation. It may become practical if the shape and the nature of the tubes be modified in such a manner as to prevent the laceration of the aortic wall. It is probable that the use of smooth-edged gold tubes, or of tubes lined with a vein, will be followed by better results. The question of the application of this method to human surgery will then, possibly, be considered.

### POISONS

**Cramp: A Consideration of Gas Bacillus Infection with Special Reference to Treatment.** *Ann. Surg., Phila.*, 1912, lvi, 544.  
By Surg., Gynec. & Obst.

In this article, the author presents the subject of gas bacillus infection in a comprehensive and exhaustive résumé of 187 cases, comprising all the known cases on record, including 25 new cases from Bellevue Hospital, New York, 8 of which were treated conservatively, with no deaths. He discusses the etiology, describes the types of wounds in which this infection is frequently found, the manner of the receipt of injury, and states that it is a comparatively rare disease, occurring about once in 644 cases of trauma. Special emphasis is laid upon the treatment of this condition, and a comparison, as regards recovery, is made between those treated conservatively and those upon which an amputation had been practiced.

Eighty-four per cent of the 187 cases, taken as an entity, involved the extremities; 76 were due to compound fractures; 41, the result of extensive lacerated wounds and crushing injuries; 21 were

post-operative; 15 had their origin in gunshot wounds; the remainder were due to various causes, as subcutaneous injections, hypodermic administrations, bites of animals, gorings, and obstetrical cases. The gross mortality was 48 per cent. Fifty of these 187 cases were treated by amputation, with a mortality of 30 per cent; while 30 cases were treated by incisions, with either continuous or frequent irrigations, with but three deaths, and these three were the result of complications — tetanus, hæmorrhage, and mixed infection, respectively.

In the matter of treatment, the author considers prophylaxis to be of extreme importance. All wounds caused by great force, especially if contaminated with soil or dirt-covered objects, should be treated as if infected with gas bacilli; they should be left open, freely irrigated, bandaged lightly or not at all, inspected frequently and frequently irrigated and never should be encased in plaster. On the first sign of infection, a smear should be taken, free incisions made, and the wounds immersed in bath or constantly irrigated.

In conclusion, the author says: 1. The incubation is very short. 2. The disease can be classified into superficial and deep, the former easily combated, the latter requiring prompt energetic action. 3. The more conservative methods should be employed in the treatment of gas bacillus infection. 4. Oxygen in some form should be used, preferably hydrogen peroxide. 5. Extreme pain coming on during the first twenty-four hours following injury, and this accompanied by sudden rise in temperature, should excite suspicion. 6. Early recognition is the keynote in combating this condition. 7. Smears should be made from the original wound, and not from some point distant from it.

### ELECTROLOGY

**Cole: Serial Radiography in the Differential Diagnosis of Carcinoma of the Stomach, Gall-Bladder Infection, and Gastric or Duodenal Ulcer.** *Arch. Rönt. Ray.*, 1912, cxlvii, 172.  
By Surg., Gynec. & Obst.

The author discusses in a ten-page article the value of serial radiograms in the diagnosis of many lesions of the right hypochondrium. Not claiming the serial speed in true Röntgen cinematography, he recommends a short series from this and that cycle of the stomach with a technique that permits of fluoroscopic observation before, during, and after the exposures. By an examination of each plate in the series all irregularities in the profile of the bismuth shadows can be identified as either due to peristaltic wave action or not, and a good idea of the mechanical action of the organs can be obtained. In this way the series explains many peculiar appearances seen on any single plate.

Although the radiographic appearances of intra- and extraventricular tumors, ulcer, and other conditions affecting the mechanics of stomach, pylorus, and duodenum are described at some length, and the



differential points classified systematically, the article hinges around the subject of adhesions. The author describes fully the characteristic appearances which may be seen on a series of plates where the action of the bismuth-filled viscera was affected by adhesions to surrounding organs, and contrasts them with the typical appearances seen when tissue masses have invaded the wall of the viscus or exert pressure from without.

The article is accompanied by two dozen half-tone reproductions from radiographs, illustrating the lesions discussed.

HOLLIS E. POTTER.

**Barjou and Japiot: Radiotherapeutic Treatment of Angiomata** (Le traitement radiothérapique des angiomes). *Lyon Chir.*, 1912, viii, 401.

By Journal de Chirurgie.

The conclusions of this article, based upon a report of personal experience with more than 70 cases and containing many well-prepared illustrations, are the following:

1. In naevi pigmentosi, radiotherapy is absolutely contraindicated; if suppression of the naevus should ensue, recourse would be to its surgical extirpation.

2. In punctated, stellar, telangiectatic naevi, radiotherapy gives but slight result and electrolysis should be preferred to it.

3. In the plain vascular naevi ("wine spots"), radiotherapy is in nearly all cases insufficient; of six cases so treated, the authors record three in which this failed, two cases which showed slight improvement, and one complete recovery. This one success was obtained with an infant a few months old, and is probably to be explained by the timeliness of the treatment. On older lesions radiotherapy seems to be without effect; radium gives perhaps better results.

4. Tuberosc vascular naevi (angiomata in the proper sense), constitute the formal indication of radiotherapy, at least in young children; 67 cases, variously located, in subjects of this age, were treated by Barjou and Japiot and all have recovered, without scars and with æsthetically perfect results. With adults, on the other hand, the authors have encountered failure and believe that electrolysis is preferable.

To insure a perfect result — that is to say, healing without cicatrices — radiotherapy must be applied "prudently and patiently"; applications must not be repeated until an interval of three or four weeks has elapsed; always avoid radiodermatitis.

CH. LENORMANT.

**Poncet and Leriche: Heliotherapy** (Héliothérapie). *Bull. de l'Acad. fran.*, 1912, lxxviii, 261.

By Journal de Chirurgie.

Heliotherapy was tried by Poncet and Leriche for the first time about twenty years ago. Since then, the authors estimate, they have employed insolation in more than 500 cases.

Where must heliotherapy be undertaken? It can be carried out in all countries. All that is necessary

is to prolong the time of each treatment, which may be given in the open country or in the city.

Where should heliotherapy be carried out, if the patient is able to change his place of residence? The air of the mountains and the intense insolation which we can so easily secure in the region of the snows seem to be particularly suited to deep-seated tuberculosis of the bones, and especially to the fistulous forms. All forms of local tuberculosis which supervene during the development of pulmonary tuberculosis should also be assigned for mountain treatment.

On the other hand, adenopathies, superficial tuberculosis, scrofulous affections, rickets, osteo-articular deformities in childhood and adolescence, and all the inflammatory forms of tuberculosis improve better under heliomarine treatment than under high altitude treatment. Poncet and Leriche recommend treatment in which the exposure is progressively increased.

Beginning with only ten minutes, we may increase the exposure, more or less quickly according to individual adaptation, to three hours, morning and evening, and from May till September.

While it is true that patients whose skin becomes pigmented most rapidly are the ones who recover better, the rule is not absolute, and in a number of cases has been found not to hold at all.

Theoretically, every form of tuberculosis will get better under insolation. In practice, however, there are localized forms of tuberculosis, such as renal tuberculosis, upon which heliotherapy seems to have no effect.

It is in tuberculosis of the peritoneum, of the lymphatic glands, and of the bones and joints, that heliotherapy acts most beneficially.

In tuberculous peritonitis of the acid form, the combination of heliotherapy with laparotomy gives results much more rapidly than the sun-bath cure if used alone, and much more lasting than laparotomy employed alone.

In the fibrocaceous forms this combination is likewise the method of choice. On the other hand, the dry forms and the incipient forms may be treated with the sun-bath cure exclusively.

Bacillary synovitis, and even "synovitis with rice bodies," will improve rapidly under exposure to the sun.

Tuberculous adenitis resists heliotherapy when carried out in the interior and treatment of this condition constitutes the triumphs of heliomarine cure.

When the glands are soft and suppurative it is better to puncture and purge them than to rely upon the action of sunlight alone.

In the treatment of osteo-articular tuberculosis, heliotherapy has already effected many cures. Thanks to heliotherapy, Poncet and Leriche hardly ever amputate the lower limbs, and almost never the upper limbs; thanks to it, resection is no longer a conservative but a radical treatment, with very restricted indications. They scarcely ever resect



the knee, as immobilization by a plaster cast and insolation will cure most white tumors which formerly were operated. Resection is to be reserved for the painful forms and such cases where social considerations make it necessary to gain time.

For the foot and for the elbow, resection is superior to every other form of treatment. Dry caries of the shoulder justifies prompt intervention. The other forms of arthritis of the shoulder and the white tumors of the wrist get better under conservative treatment.

The conservative treatment for all joints consists in a combination of immobilization and insolation.

A patient systematically exposed to the sun will get better. Though his recovery may not always be as rapid as with simple immobilization, it is more certain to be obtained, and its quality is better. It is very common to see a complete return of the function of the joint and very often patients have only a partial limitation of movement of the affected joint.

Heliotherapy is a valuable resource for post-operative treatment.

The effect of the action of the sun is also very beneficial in Pott's disease, in tuberculosis with multiple foci, in fungous osteitis with or without fistulæ, and in residual osteitis. Heliotherapy does not act to any great extent upon painful osteitis. If there are sequestra, Poncet and Leriche intervene to hasten recovery.

In the inflammatory forms of tuberculosis (subacute and chronic tubercular rheumatism) the sun-bath treatment is remarkably effective, particularly if given by the seaside.

Even scrofulous affections and rickets will be quite beneficially affected by heliomarine treatment.

In non-tubercular affections, Poncet and Leriche note the remarkable effects which they have obtained in cases of retarded union of complex fractures, in cases of persistent ulcers and infected wounds (in a word, in all prolonged infectious states), and in the most diverse forms of trophic disturbance.

CHIFFOLAU.



## GYNECOLOGY

### UTERUS

#### Jessup: Hodgkins' Disease Involving the Uterus.

*Am. J. Obst.*, N. Y., 1912, lxvi, 401.

By Surg., Gynec. & Obst.

Jessup reports the autopsy findings of a case of Hodgkins' disease in which there is extensive involvement of the uterine wall, with nodules which microscopically are typical of Hodgkins' disease. The increasing size of the uterus, with enlargement of the lymphatic glands, had earlier occasioned the diagnosis of sarcoma uteri with lymphatic metastasis.

N. SPROAT HEANEY.

#### Kamperman: A Study of Two Hundred and Twelve Cases of Cancer of the Uterus, with Especial Reference to Early Diagnosis. *Am. J. Obst.*, N. Y., 1912, lxvi, 596.

By Surg., Gynec. & Obst.

Kamperman has studied the 212 cases of uterine cancer which have occurred in the university and private clinics of Dr. Reuben Peterson, and comes to the following conclusions:

1. Cancer holds fifth place as a cause of death in Michigan.
2. The death rate due to cancer during the last five years has increased 15 per cent, while the death rate due to tuberculosis has decreased.
3. Among gynecologic patients, one in every 25 has cancer of the uterus.
4. Five sixths of uterine cancer is primary in the cervix; one sixth in the body.
5. The age limit is from 28 to 75 years, average being 48 years.
6. Carcinoma of cervix is more frequent from 35 to 45 years of age; carcinoma of the body between 45 to 65 years of age.
7. Carcinoma of the body develops over a longer range of years than carcinoma of the cervix.
8. Patients with cancer of the cervix give a history of child-bearing in 92 per cent of all cases; with cancer of the body in 72 per cent.
9. Though more carcinoma in parous women, carcinoma of the uterus may develop in nulliparæ.
10. Heredity has very little part in the development of uterine cancer.
11. Carcinoma of the uterus can be cured by operation in early cases.
12. The early diagnosis of carcinoma of the uterus depends on giving close attention to the earliest symptoms. An increase in the bleeding in a woman approaching the menopause demands a careful investigation and a microscopic examination of tissue from the cervix and body.

13. The first symptom in 73 per cent of cases is an increased menstrual or an irregular intermenstrual discharge of blood.

14. Watery and foul discharge and pain are symptoms occurring at a later stage of the disease.

15. Carcinoma of the uterus occurs in many healthy and robust looking women. Cachexia occurs only in advanced stages of the disease.

16. The radical abdominal operation offers the only absolute cure for carcinoma of the cervix.

17. Carcinoma of the corpus can be cured by a less radical operation. In inoperable cases, temporary relief can usually be secured by a palliative operation.

18. Most of the patients afflicted with this disease die either from some terminal infection or from uræmia.

19. To obtain early diagnosis, the profession as well as the laity must be educated.

20. All women must be taught that the menopause means lessened flowing, and that an increase at this time may signify disease.

21. An organized campaign of education is necessary if more patients are to be saved from cancer in all its forms.

N. SPROAT HEANEY.

#### Von Winewater: A Rare Form of Carcinoma in a Fibromuscular Polyp of the Uterus. *Arch. f. Gynäk.*, 1912, xcvi, No. 1.

By Surg., Gynec. & Obst.

Woman 66 years of age; 5 normal labors. Menopause 16 years ago. Four weeks ago, hæmorrhage. Fœtid and bloody discharge; in vagina, polyp with pedicle in left uterus wall. Uterus movable, parametria negative. Excision of polyp; vaginal extirpation of uterus. Microscopically, a fibromuscular polyp of the mucous membrane showing in it, and in vicinity a malignant growth. This was partially epithelial, an adenocarcinoma. Question arose as to whether there was not a sarcoma of the stroma present at the same time. Winewater cites the mutation tumor of Ehrlich and Apolant in the stroma of transplanted mouse carcinoma, with development of a sarcoma within the transplanted carcinoma. He concludes that the polyp does not belong to the type of mixed tumor, that it is a diffuse infiltrating carcinoma. The cells, apparently of different type, prove on closer examination to all belong to the same form, showing all varieties, from cells without protoplasm and large transparent nuclei to the forms rich in protoplasm with small and well-stained nuclei. He concludes that the apparent sarcomatous degeneration of the stroma is a misconception. The origin of the carcinoma could not be defined. Most probably it arose in the



pedicle, advancing into the interior and also upon the adjacent mucous membrane. It was striking that carcinoma could be found everywhere in the polyp, while the uterine wall was entirely free from it. Winewater thinks that the œdematous loose tissue of the polyp was less resistant to the invasions of the tumor than the firm strong fibrous wall of the corpus uteri.

E. C. RIEBEL.

**Bovée: Statistics in Radical Operation for Cancer of the Cervix Uteri.** *Am. J. Obst.*, N. Y., 1912, lxvi, 380.

By Surg., Gynec. & Obst.

Between 1898 and 1909 Bovée performed the radical abdominal operation for cancer of the cervix 36 times, with a primary mortality of 25 per cent. He reports that 6 cases died within three years from recurrence of cancer, and that 3 have died from other diseases, one eleven years after operation under symptoms of uræmia. Ten cases are not traceable. Eight patients are known to be living without recurrence—one 4 years and 9 months, and 7 over 7 years since operation; in three of these cases it is over 12 years since the operation was performed. He believes that his series, though small, with its 22 per cent of cures of an average of 10 years apiece, is a sufficient argument for the performance of the radical operation. To lessen hæmorrhage he ligates the anterior branches of the iliacs.

N. SPROAT HEANEY.

**Macfarlane: Retrodisplacements of the Uterus Treated by the Gillian Method of Round Ligament Suspension.** *J. Obst. & Gynec. Brit. Empire*, 1912, xxii.

By Surg., Gynec. & Obst.

This article is based on notes of 100 cases operated upon during the past three years. This method of operating was chosen after an extensive experience with ventrosuspension and fixation. Of the series, fifteen had previously had ventrosuspension performed, with recurrence. Baldy's method is unfavorably considered, as there is greater liability to recurrence should pregnancy follow at a later date. The Alexander operation has too limited a range of usefulness, and shortening of the uterosacral ligaments alone is not regarded as sufficient in itself.

The indications for the operation and the symptoms are given as in accordance with generally accepted ideas. As to method, Macfarlane brings the round ligaments through peritoneum, rectus, and anterior fascial sheath, about one and a half inches below the level of the anterior superior spines of the ilia. In but 3 out of 145 cases were the round ligaments found so attenuated as to be unfit for this operation.

Objections to the operation are frankly set forth. Quoting from Lewers, these are formulated as follows:

"In this operation the effect also is to produce two 'pillars' in the abdominal cavity, one on each side, where the round ligaments come through the artificial opening in the peritoneum; and therefore

the operation appears to be open to the same objections as fixation of the uterus, only the more so, inasmuch as by it two 'pillars' are produced within the abdominal cavity instead of one. It seems possible also that a space may be left between each 'pillar' and the corresponding groin on each side; if this occurs the effect is to produce a foramen in the position indicated; a possibility therefore exists of partial or even complete intestinal obstruction. Dudley's modification of this operation avoids the formation of any 'pillar' and is to be preferred."

The author's experience gained from three cases subsequently reopened leads him to believe that these objections are infinitesimal.

As to results: Macfarlane's cases show no mortality, the rapidity of convalescence is as great as in any other form of uterine suspension, and the morbidity has been practically negligible. In one case thrombosis occurred, but with ultimate and excellent recovery; and in another a recurrence of the malposition took place some days after operation in a patient who developed an acute pneumococcal pulmonary and wound infection.

Sixteen of the cases subsequently became pregnant, and no difficulty was experienced at the time of delivery. One case aborted at the third month, and one at the sixth as the result of hyperpyrexia, the febrile attack being of unascertained cause. The uterus in every case involuted normally, and there has been no recurrence of the displacement. All the patients complained of pain in the early months. Bladder irritability was noticed in but three cases; all cases of mobile retroflexion have been cured of symptoms and remain well. Complete relief is experienced by 85 per cent of those patients in whom complications of an inflammatory nature were discovered; 10 per cent continue to have some pain, and 5 per cent have no relief. Conservative surgery was practiced as far as possible, with apparently satisfactory results.

CAREY CULBERTSON.

**Mayo: Surgical Treatment of Prolapse of the Uterus and Walls of the Vagina.** *J. Am. M. Ass.*, 1912, lix, 1421.

By Surg., Gynec. & Obst.

From September 30, 1889, to September 1, 1912, 628 women were operated on in St. Mary's Hospital, Mayo Clinic, for prolapse of the uterus.

Group 1 includes those cases occurring during the child-bearing period in which there is supravaginal hypertrophy of the cervix. They should be treated in a manner not to interfere with the child-bearing function, because many of these patients will continue to bear children in spite of the prolapse. High amputation of the cervix, not closer than one half inch to the internal os, in connection with the external shortening of the round ligaments and some type of perineal operation which elongates the posterior vaginal wall, will readily cure at least 96 per cent of these patients. It has been said that the permanence of an operation on the round ligaments



depends on whether or not there are to be future pregnancies. It should not be forgotten that the round ligaments are non-striated muscle fibers and part of the wall of the uterus itself, which has been projected forward to the spine of the pubes. The round ligaments undergo hypertrophy during pregnancy and involution following pregnancy. We have not found that repeated pregnancies have influenced the ultimate results in these cases.

Group 2 includes the cases which ordinarily occur between the ages of 45 and 55, in which the uterus is not atrophic and the cystocele is the most striking feature. The Watkins-Wertheim operation is the most satisfactory treatment in these cases. The principles of this operation are correct inasmuch as the bladder is first separated from the vagina and then from the anterior wall of the uterus, thus restoring the bladder to the abdominal cavity and drawing the fundus of the uterus forward into a complete antiversion, with suture to the anterior vaginal wall so that the bladder will lie within the abdominal cavity on the posterior wall of the uterus. When the bladder fills with urine it exerts upward traction instead of downward pressure. Since in many of these cases the prolapse began in the child-bearing period, and supravaginal elongation of the cervix is present, amputation of the cervix may be necessary, as it may be too long to lie in the hollow of the sacrum without flexion. If the uterus be not sufficiently large, that is, approximately near the normal size, this operation will fail.

Group 3 is composed of the senile cases in which the uterus has undergone advanced atrophy and, together with the vagina, cystocele, and rectocele, lies outside the body. The most generally useful treatment in these cases is one termed the "vaginopelvic fixation operation." Removing the uterus, and usually the ovaries and tubes, the round and broad ligaments can be secured high in the pelvic cavity, and that part of the vaginal wall which is attached to the cervix outside the body is fixed to the round and broad ligament stumps inside the pelvis.

Tait's perineal operation has two important principles. First, it uncovers the muscles and structures which had been separated, so that they might be accurately sutured together. Tait opened the perineum as one would open the abdomen in order to gain access to the parts to be repaired. The second principle is one which I believe has not been generally recognized. The mucosa is lifted well off at each angle, but the dissection is not made deep in the midline. The apex or crest of the rectocele is then pushed upward and held inside the vagina; this traction draws on the torn fibers of the external and internal sphincters of the rectum. In closing, the lateral muscular structures were brought together and united with the torn sphincter fibers, restoring proper direction to the anal canal. This upward and inward traction of the crest of the rectocele also elongates the posterior vaginal wall. Curiously enough, the worst type of rectocele may

not be associated with prolapse, but exists as a true rectal hernia through the perineal body, in which a circular opening with well-defined margins will be found just above the external sphincter. The sac lined with mucosa may be the size of an egg or an orange as it projects from the vagina. This condition is best corrected by the method of Noble — separating the rectal structures from the posterior vaginal wall through the perineum in the usual manner. The sac is then drawn out through the anal orifice after the sphincter has been thoroughly stretched. Following its extrusion it is caught in a clamp and cut away. With a running suture of catgut the mucosa is closed, the suture line left protruding from the anus until it retracts.

**Polk: Suprapubic Plication of Vagina and Conjoined Shortening of the Uterosacral and Broad Ligaments.** *Surg., Gynec. & Obst.*, 1912, xv, 322.  
By Surg., Gynec. & Obst.

The author stated that, after trying all the accepted methods, he had found this more successful than others had been in his hands. He submitted 18 cases as examples. In every case the uterus rested entirely without the body or as far as midway through the cervix, and one case was of prolapse of the vagina and bladder following removal of the uterus years before for procidentia. Treatment by pessary had been tried in all of these cases. All of the patients did well under operation, making good recovery from the operation, and the ultimate results to date are all that could be desired. Eight of the cases had been operated upon two years before; more than half, a year before; and the remainder within the year. He found that patients bore separation of the bladder from the vagina with little shock, and that there was little hæmorrhage, that which did occur being easy to control. Therefore the operation could not be considered one of great risk. The vagina is rendered surgically septic by washing with tincture of iodine. A free opening is made in the abdomen between the umbilicus and symphysis. The uterus is drawn upward, taut. The bladder is separated from the entire front of the vagina down to and beneath the trigone. The anterior wall of the vagina is plicated by four or five kangaroo tendons, passed through the lateral wall of the vagina across the anterior face to the opposite lateral wall, through which the suture is also passed. By tying these firmly, the anterior wall is turned in. A kangaroo tendon, one on either side from before backward, is passed through the broad ligaments, then around the uterosacral ligament from an inch to an inch and a half from the uterus, according to the amount of slack. The suture is returned through the broad ligament just above the uterine artery and buried in the anterior face of the uterovaginal junction. In passing through the broad ligament it passes half an inch below its initial track. These two sutures are firmly tied. The round ligaments are seized about an inch and a half from the uterus, brought together,



and fastened down at the uterovaginal junction. This may be done separately or by means of the same sutures which encircle the uterosacral fold and base line of broad ligament. If the fundus needs to be brought forward, seize the round ligaments one inch further out and attach that point to the uterus where the ligaments spring from its side. The peritoneum which belongs to the anterior face of the broad ligament is brought well down into the uterovesical space so as to make the fossa between the uterus and bladder as shallow as possible. The ridge which represents the anterior wall of the vagina is now treated from the direction of the vagina. If there is too much tissue, some may be cut away and the proper surfaces stitched together. If there is not, the surfaces are brought into apposition by through-and-through sutures, passed successively from below upward, or vice versa, as is more convenient. The ureters are readily avoided by making sure that separation of the bladder from the vagina is complete and that a like separation of the lateral wall of the vagina is secured. The main arteries are avoided by being outlined by palpation as the sutures are passed.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**Voronhoff-Jayle: Grafting Ovaries** (*Le graffe des ovaires*). 26th Cong. l'Ass. fran. de Chir., Paris, Oct. 9, 1912. *By Journal de Chirurgie.*

Voronoff reports the results of a series of experiments on ovarian grafting. He chose young ewes for these experiments, because their genital organs most closely approach those of woman. After double castration he engrafted them with an ovary taken from another sheep. The ovary was taken sometimes from living animals, sometimes from sheep which had been dead for two hours. Voronoff has kept in all only four of these sheep, which were operated as long as six months ago. He presents the genital tract taken from one of them, operated upon March 12th and killed the 26th of last September.

The appendages on one side of this specimen are altogether missing. On the other side we find the original tube and the engrafted ovary. A thread of fine cicatricial tissue which surrounds it represents the vestiges of the sutures made to fit the grafted ovary into the exact place occupied by the original. This ovary is normally developed and possesses abundant vascularization. The transplanted organ is of such normal appearance that, were it not for the cicatricial suture attesting its origin, one would not imagine that it had been grafted. Thus heterogeneous grafting of an organ as highly differentiated as the ovary has become realized. Its position in relation to the ampulla of the tube permits the migration of the ovule toward the uterus and secures physiological function, as one of the sheep operated upon has since become pregnant.

Voronoff attributes the success of these heterogeneous graftings in large measure to the fact that he has directed his latest experiments to animals of

the same variety and having the same parent. Thus, he has always failed when grafting an ovary from one ewe to one of another species; these animals were killed at the end of five months and no trace was found of the ovary, which had been completely absorbed. The quality of the blood of the receptor and of the donor, from the point of view of hæmoly-sis and agglutination, must therefore be taken into consideration when we pass from experimentation to human surgery. Heterogeneous grafting of a complex organ cannot succeed except in individuals having the same quality of blood.

Jayle claims that the time which has elapsed since the graftings were made has been too short for practical application. The difficulty is to obtain grafts which are permanent, as the economy of the body tends to absorb all inert tissue which is introduced. Jayle has experimented along these lines for fifteen years, and believes that he was the first one in France to attempt this work; but he claims never to have obtained permanent results. He deems it necessary that an interval of about five years must have elapsed in experiments upon such animals as the sheep and the dog in order that we may determine the final results of ovary grafting.

In 1897, Jayle presented to the Anatomical Society of Paris a small series of animals upon which he had practiced three classes of ovarian grafting: (1) grafting in the same female from one point of the peritoneum to another; (2) grafting the ovary of one animal into an animal of the same species; (3) grafting the ovary of an animal of one species into an animal of another species.

The question of ovarian transplantation from one species to another is of the greatest interest, for it aims at control of the law of immutability of species and seeks by a new means to produce mongrels. Jayle has not succeeded, but he believes that we should persevere, as the question is too new to accept the lack of success as conclusive proof.

Jayle finds no practical advantage in grafting the ovary from one point of the peritoneum to another point of the organism. In general, these grafts disappear rapidly, because their vascularization, though not impossible, is always quite difficult to insure. Jayle declares that he does not understand the idea of those surgeons who remove the ovary from its normal place to put it into another, whether it be in the peritoneum or in the skin; since if an ovary is to be conserved, what better than to leave it in place, with its normal vascularization.

Ovarian grafts from an animal of one species into another animal of the same species, or from one woman into another woman, no longer have any great practical interest.

In animals, Jayle has not obtained fecundation. If others have been successful in that respect, the fact remains, nevertheless, that success has not been easily insured. In woman—in such exceptional cases where one is obliged to venture everything to obtain fecundity—one might have recourse to the operation, but only after making a minute examina-



tion of the patient for tuberculosis, syphilis, and various infectious intoxications. The rare observations of success which have been published on this subject are by no means convincing; it is only necessary to study the original literature on such experiments for one to draw his own conclusions.

If the point which Voronoff makes concerning the selection of the donor in performing an ovarian graft is substantiated by further study, a new difficulty will arise in its practical application in woman. Voronoff insists that both ewes must come, at least, from the same herd, having a single bell wether, and if possible from the same mother, if successful results are to be obtained. In transferring this principle of choice to the human species, the donor and receptor must come from the same family, and this would not contribute toward its propagation.

J. DUMONT.

**McIlroy, The Physiological Influence of Ovarian Secretion.** *Proc. Roy. Soc. Med.*, 1912, v, 342.

By Surg., Gynec. & Obst.

This consists in a rather exhaustive review of the above subject, taking it from many standpoints, and the second part consists of experimental work. This experimental work can best be summarized in the words of the author.

1. "The ovary controls the nutrition of the uterus and other reproductive organs, since removal of both ovaries causes atrophy of the muscular and glandular elements of the uterus, etc., the degree of atrophy being in direct proportion to the length of time which has elapsed since the operation. There is also a diminution in the uterine blood-vessels, and a tendency to atheroma — a condition very closely allied to fibrosis of the uterus in the human subject. Menstruation and œstrus do not occur after complete removal of both ovaries. In young animals, after oöphorectomy the infantile type is maintained."

2. "Removal of the uterus, or retention of uterine secretion, does not affect the functional development of the ovaries, seeing that the elements of the ovary are well preserved after hysterectomy and ligation of the uterine horns. Retained uterine fluid does not counteract the atrophy of the uterus which takes place after removal of both ovaries. There is thinning out of the uterine wall at the point of greatest distention, and no compensatory hypertrophy has been observed."

3. "Removal of one ovary causes compensatory hypertrophy of the other in the anœstrous state."

4. "That the interstitial cells perform the chief rôle in the maintenance of the nutrition of the uterus is evidenced by (a) the survival of these cells in grafted ovaries, (b) the follicles becoming absorbed or cystic, and (c) the fact that no atrophy of the uterus occurs when these cells are present. The interstitial cells become functionally active during pro-œstrum, as shown by their being enlarged and their cytoplasm becoming infiltrated with a lipoid substance (in female dog). That the corpus luteum

is the part of the ovary which exerts the most active influence upon the body as a whole is shown by the fact that corpus luteum extract, when injected, causes rise of the general blood pressure."

5. "From the result of one experiment it was found that the ovaries do not play such an important part in the elimination of calcium as is supposed, since after castration the calcium output was increased, whereas it was diminished as the result of administration of corpus luteum extract."

6. "Removal of the ovaries in rabbits causes an increased deposit of fat in the tissues of the body."

C. G. GRULEE.

**Wilson: Gelatinous Glandular Cysts of the Ovary and the So-Called Pseudomyxoma of the Peritoneum.** *J. Obst. & Gynec. Brit. Empire*, 1912, xxii, Oct.  
By Surg., Gynec. & Obst.

This article is a critical review of the literature on the subject of gelatinous cysts of the ovary, with reference particularly to the pseudomyxomatous variety, supplemented by notes from records of six typical cases. Of 331 tumors of the ovary, 144 were glandular pseudomucinous cysts; and of these, aside from the 6 typical cases, there were 5 others in which the contents were gelatinous, although no extensive effusion into the peritoneal cavity had occurred.

"In 4 out of my 5 unruptured firm gelatinous cysts, the patients were single women; the fifth was a vi-para. Three of the women were under 40. . . . In most of the cases a certain quantity, usually small, of free soapy exudation was present in the peritoneum, although no rupture or perforation of the cyst could be made out. One of the cases is of peculiar interest in that, after removal of a right-sided cyst, a second one of the weight of three pounds grew in the left ovary within five months; the left ovary had been observed at the first operation to be shriveled and senile in appearance. The second cyst had burst, discharging a large quantity of mucoid fluid into the peritoneal cavity. Both cysts were proved by the microscope to be simple glandular in structure. This case was of further interest in that the patient had a fibromyoma, and later developed carcinoma of the body of the uterus, of which the first symptom appeared within a year of the second ovariectomy, the patient dying about six years later. The removal of the two ovaries caused regression of the fibroid, but did not prevent the subsequent malignant development in the uterus, an important condemnation of the operation of double oöphorectomy for uterine fibroid."

"Among the six ovarian tumors in the five patients under consideration, three had twisted pedicles, an occurrence that was not noted once in my six cases of pseudomyxoma, although it may have been present in Case 1. In another of the unruptured cases, the tumor grew 25 years after a cyst of the other ovary had been removed."

Pseudomyxoma of the peritoneum occurs oftenest between the ages of 40 and 60. Wilson's youngest



patient was 38 and the oldest 74. The affection is most frequently found in multipara. Menstruation usually is not affected, but most of the women have already passed the menopause. The clinical course is rapid, the abdomen becoming distended in a comparatively short time. The time between the appearance of the first symptom and the operation was never longer than eleven months, and less than four months in two cases. Enlargement is usually the first sign, though pain may precede. Edema of the legs was first noticed in one case. The physical signs are those of a large ovarian cyst, the outlines being more or less indefinite. Tenderness on palpation is rare.

"Pathologically, the ovarian cyst in the cases under consideration is a multilocular one, made up at its base of a very large number of small and medium size loculi, from the size of a millet seed or less to that of a walnut. The loculi are filled with the characteristic gelatinous material, transparent, homogeneous, and either colorless or faintly tinged yellow or green; and they are divided by very delicate transparent connective tissue septa, thinner than tissue paper, and lined by columnar secreting epithelium, which is the source of the gelatinous material. This is arranged in a single layer, and is seen in different stages of rest and activity.

"The pedicle of the cyst was well formed in four cases, in one of which there was a hæmatoma around the ovarian vessels, for which no cause could be made out. In one instance the growth had invaded the broad ligament, and at the operation there was some difficulty in clearing the disease of the lower end. In the sixth instance there was a pseudointraligamentary pedicle, the cyst having developed in an ovary bound down by old firm adhesions.

"In none of the six cases was the second ovary affected by the new growth; in the case with pseudointraligamentary development, the appendages of the opposite left side were fixed among themselves and to the side of the pelvis and back of the broad ligament by old dense fibrous adhesions; these had involved the ureter, leading to its dilatation and to hydronephrosis. In one case there was a dermoid loculus in the midst of the ovarian cyst."

The involvement of the peritoneum was shown by Werth in 1884 to be secondary to rupture of the cyst and escape of the contents, a plastic chronic inflammation due to the presence of foreign matter in contact with the serous membrane. Thus the term chronic pseudomyomatous peritonitis is justified for the majority of the cases. True implantation metastases are found, living and active strands of the secreting epithelium escaping from the cyst and becoming attached to any part of the surface of the peritoneum. These implantations are not necessarily confined to the peritoneal cavity, as in one case (Taylor's) a large metastatic growth was found in the middle lobe of the right lung.

The prognosis is unfavorable. "Laparotomy was performed in 33 cases of the cases collected by Strass-

mann, and 16 of the patients died within four weeks; in 8 of the fatal cases there were no traces of sepsis or of purulent infiltration at the autopsy; the patients died from the fourth to the ninth day, apparently from toxæmia due to the breaking down of the gelatinous material. Only 15 cases were cured by the laparotomy, and of these not more than 5 made a smooth convalescence; in the others there was more or less fever, and in 3 threatened ileus. The outlook in cases of this nature was, therefore, very unfavorable; the primary mortality was great, and in those which recovered recurrence frequently took place.

"The outlook as regards freedom from recurrence must always be doubtful, even in the favorable cases where no epithelial transplantation has been discovered at the operation; small buds may lurk unobserved in some of the recesses of the peritoneum, may remain latent for a longer or shorter time, and then burst into renewed activity. . . . As a rule there is recurrence, often after many years."

Of Wilson's cases, 5 recovered after operation; one of them, in whom there were true metastases, remained well for more than two years, and then died of a psoas abscess of unknown origin; many small cysts were present in the pelvis, so that renewed active growth might have set in at any time. Of the other cases, 3 remain well after more than eight, seven, and two years respectively; while the fourth was operated upon as recently as November, 1911.

CAREY CULBERTSON.

**Chavannez: Cystic Tumors of the Ovary with Gaseous Contents** (Sur les tumeurs kystiques de l'ovaire à contenu gazeux). 26th Cong. de l'Ass. fran. Chir., Paris, Oct. 7, 1912.

By Journal de Chirurgie.

The author outlines the principal characteristics of ovarian tumors with gaseous contents.

From the point of view of pathology two hypotheses present themselves: either these gases originate in the intestine or in loco. The first theory may explain those cases in which the tumor is of old standing and is shown to be without well-marked local and general symptoms. On the other hand, when the development of the disease is rapid, when intestinal adhesions are either absent or not very marked, and when operation shows the absence of perforation, it is much more logical to assume that microbic infection has caused the formation of the gases in loco.

Differential diagnosis must eliminate tuberculous peritonitis and foci of suppurative peritonitis, associated with gas formation.

Jayle reports a case of gaseous cyst which he has observed in a woman 40 years of age, who had for some time been treated with electricity. The patient was affected with a generalized suppurative peritonitis, high temperature, and a general adynamic state. The operation proved the existence of pelvic tumor, which had at first been taken for a cyst. When punctured, the tumor emitted fetid



gases. When the pocket was opened it gave forth liquid matter, so that the question arose as to whether the tumor was not an overdistended pelvic colon. The pocket had forced the uterus to the left and beneath itself, so that it was at first not easy to make out relations. Nevertheless the operation was carried out successfully. It was finally shown that it was a cyst of the right ovary which contained gases, adhered on all sides to the pelvic organs, especially to the anterior surface of the rectum. It presented neither an aperture nor any point where gas could have gained entrance from without.

Recalling the investigations which he had made and presented to the Anatomical Society in November, 1893, on the pathogenesis of rectovaginal fistulæ after vaginal hysterectomy, Jayle thinks that the etiology of gaseous cysts of the ovary is very simple; the gases are due to micro-organisms which come from the intestine by way of more or less extensive adhesions of the cyst wall with some part of the intestine, more particularly with the pelvic colon or the rectum.

J. DUMONT.

**Lamoureux: Diffuse Peritonitis Due to Rupture of the Pyosalpinx** (Les péritonites diffuses par rupture de pyosalpinx). *Arch. gén. d. Chir.*, 1912, vi, 1005. By Journal de Chirurgie.

Rupture of a pyosalpinx is a rare accident, so that the author has been able to gather but 27 cases, one of them being his own.

The onset ordinarily is sudden, coming upon a woman in seemingly perfect health, either slowly, in the course of a few days, or in an acute form. Sometimes the patient feels a sensation of cracking, but is without any violent pain. The pains are originally pelvic or iliac, but quickly become generalized over the whole abdomen, and are accompanied by vomiting and constipation; the classic picture of shock is established; fever is the rule, and the abdomen, which in the beginning was retracted, becomes tympanitic and hard. Acute superficial tenderness is present.

Vaginal examination shows the presence of more or less extensive pelvic lesions. Left to itself, this peritonitis may become encysted, but nearly always it is generalized.

Diagnosis can rarely be made. One would think either of peritonitis of appendicular origin or of a peritoneal involvement due to rupture of an ectopic pregnancy.

The rational treatment of diffuse peritonitis due to rupture of the pyosalpinx must respond to two conditions: it must be timely, and must have as its principal aim the suppression of the cause of the peritonitis. The operation must be timely; mortality does not exceed 50 per cent when the intervention is made within the first 12 hours; it reaches 80 per cent after 40 hours.

The perforated tube may be removed alone or together with that of the other side, or together with the appendages of the other side and the uterus by

means of a supravaginal hysterectomy. The minimum operation being all that is necessary (Lejars), total hysterectomy is to be condemned. The more conservative method should be employed in those cases where the extent of the lesions of the small pelvis renders enucleation of the appendages either difficult or impossible.

The method of choice consists in pure and simple ablation of the appendages.

Lavage of the peritoneal cavity is rejected by a great majority of authors, and drainage is what is most commonly employed.

The physician must insist above all on post-operative care, the position should be a half sitting one; for the combating of collapse and intoxication, camphor oil or normal salt are employed; for combating intestinal stasis, if the case is exceedingly grave, enterostomy under local novocaine anesthesia may be resorted to; and, finally, vomiting should be treated by gastric lavage, when twenty-four hours have elapsed since the operation.

J. DUMONT.

**Stark: Dermoid Tumors of Both Fallopian Tubes.**

*J. Obst. & Gynec. Brit. Empire*, 1912, xxiii, Oct.

By Surg., Gynec. & Obst.

Stark here reports a case of tubal dermoid cyst, first showing that Bourelly in 1910 was able to discover but three such cases by a comprehensive survey of the literature. The author's patient was 38 years of age, had been married ten years and never pregnant, and menstruated regularly but profusely and with pain. She came to the physician for sterility. Examination revealed fixed doughy swellings on either side of the uterus, low down in the posterior pelvis, which were taken to be enlarged ovaries. Upon operation it was discovered that these masses involved the tubes, one on either side. The right tube was removed; the left tumor was resected only, leaving a short potent Fallopian stump on that side. The masses were cystic in character and contained sebaceous matter, hairs, and bony plates. Each mass was about the size of a tangerine orange and was absolutely separate from the ovaries and broad ligaments, which were normal. The right cyst involved most of the tube; the left was in the outer third of its tube, the uninvolved portions of which were potent.

The other three cases are briefly as follows: (1) Pozzi's case. Insufficiently detailed. Dermoid tumor of the tube with sebaceous glands, hairs, and adipose tissue. (*Traité de Gynec. Cliniq. et Opérat.*) (2) Jacob's case. A nullipara of 48, with fibroids of the uterus and adnexal inflammation. At the outer end of the left tube was found a lemon-size tumor containing sebaceous matter and bone, not involving the broad ligament. The ovary was normal except for several small serous cysts. (*Soc. Belge de Gynec., 1899-1900.*) (3) Notto's case. A woman of 25; menstruation regular. A pedunculated tumor the size of a large orange was found, growing from the right tube near the uterine cornu, and containing



a thick white sebaceous material. The ovary of this side contained a small cyst.

Stark considers his case unique in that it is apparently the first one on record of bilateral dermoid cyst of the Fallopian tubes.

CAREY CULBERTSON.

### VAGINA

**Basset: Treatment of Primary Epithelioma of the Clitoris by Operative Surgery** (Traitement chirurgical opératoire de l'épithélioma primitif du clitoris). *Rev. de Chir.*, 1912, xlvii, Oct.

By Journal de Chirurgie.

The treatment of this form of cancer is guided by the general rules that govern surgery of cancer, namely, timely extensive intervention which is logically anatomical; that is to say, the corresponding lymphatic region is extirpated at the same time. Basset's investigations have led him to conclude that it is necessary to remove two lymphatic radicles on the right and on the left, together with the region of the clitoris — a superior radicle which, through the inguinal canal, leads to the external genitocrural gland; an inferior radicle which leads to the deep inguinal glands, to Cloquet's gland, and to the external genitocrural gland.

The incision comprises, therefore, a double inguinal tract which leads to the base of a trapezoid, encompassing the region of the clitoris, as it passes a few millimetres below the urethral meatus.

The large opening of the inguinal canal permits detachment of the superior radicle. Section of the crural arch, of the vascular epigastric plexus, and of the round ligament permits the detachment of the inferior radicle. It seems, then, as the author says elsewhere, that it would have been of advantage to cut the round ligament and the epigastric vessels directly after the detachment of the superior radicle. This operation is repeated on the other side, and thus the anatomical levels of the inguinocrural region are successively restored. Extirpation of the region of the clitoris comes last; it is made above and below by cutting close to the symphysis in order to remove, together with the tumor, an anastomotic plexus of lymphatic tissue. The wound is closed by a flap or by autoplasty.

As the operation is long and serious, although the author gives the preference to its performance in one stage, we must admit that in certain cases it may be done in two stages. The order in which the author has chosen to execute these two stages is, it seems to us, not less subject to criticism than the order frequently adopted in extirpation of cancer of the tongue, to which the author alludes. To remove the glands in the first stage and leave, even if only for a few weeks, an epithelial tumor, which frequently is infected, is to court danger. For by way of the many lymphatics which have been cut, this tumor may divert the cancer cells and agents of infection of the principal focus of infection into the cellular tissues which have been deprived of

their glands. It seems to us that we should more certainly avoid this immediate infection and subsequent relapse if we were to relieve the patient of the tumor in the first stage of the operation; and, all things considered, this removal of the tumor must still remain the principal object of the operation.

I. OKINCZYC.

### MISCELLANEOUS

**Williams, Murray, and Wallace: An Investigation of the Coliform Organisms in the Healthy and in the Infected Urinary Tract of the Female.** *J. Obst. & Gynec. Brit. Empire*, 1912, xxii.  
By Surg., Gynec. & Obst.

In introducing their subject the authors express a doubt as to the correctness of certain statements appearing from time to time in medical literature. Their reasons for undertaking this study is best expressed by quotation.

"The general impression left after reading the most important papers on the subject is that febrile disturbance arising after a gynecological operation, and associated with the presence of a coliform organism (i. e. a gram-negative, short, motile bacillus) in the urine of the patient, is, in most cases, due to that organism; and, further, that a stock colon vaccine will greatly ameliorate the patient's condition.

"Statements such as these appeared to us to be based on two assumptions; firstly, that *B. coli* is absent or very rarely present in the bladder of the healthy woman; and secondly, that all strains of *B. coli* are alike, and they are, in fact, as much a definite entity as the bacillus of plague. We thought that these assumptions, if wrong, would of necessity lead to considerable error, and we therefore set ourselves to examine the question."

The discussion is accompanied by a series of charts and tables giving the detailed findings of the cases cited. Conclusions are arranged in the following order:

1. Typical bacillus coli (MacConkey) is found in a considerable percentage of females' urines taken under conditions precluding all source of contamination. Ordinarily they have no apparent pathological significance.

2. Although in our cases culturally identical, agglutination reactions prove that there are wide biological differences between the various strains isolated.

3. As male urines very rarely show the presence of this organism, it is reasonable to suppose that the usual path of entry is by way of the perineum and urethra.

4. When infection of the urinary tract is present, the coliform organisms isolated show great variation in cultural reactions. Vaccines, therefore, should be autogenous, and since the same case may show the presence of more than one organism, vaccines should be prepared from many colonies.

5. Vaccine treatment of coliform infections is of pronounced benefit. In acute cases, if due care be



taken and the doses and intervals carefully regulated, a very marked improvement can be very speedily produced in the vast majority of cases; but to obtain this very close supervision is necessary. A first dose in acute cases should never exceed ten millions, the intervals must be short, and if there be any doubt, opsonic indices should be taken.

6. Subacute or chronic inflammations are equally hopeful, provided that the doses are suitably increased, that it is appreciated that the treatment should be coterminous with the presence of pus in the urine, and that this may be a somewhat lengthy process.

7. Cure does not necessarily imply the sterilization of the urine.  
CAREY CULBERTSON.

[Monograph.] Sigwart: The Technique of the Radical Operation of Cancer of the Uterus.<sup>1</sup> J. F. Bergmann, Wiesbaden, Germany, 1912.  
By Surg., Gynec. & Obst.

### HISTORICAL INTRODUCTION

Sigwart begins with the description of the first abdominal hysterectomy done, by William A. Freund, on January 30, 1878. It was a cancer of the cervix in a woman 62 years old. The technique then practiced is fully described, and also the fact that he made use of pelvic elevation, with which the name of Trendelenburg has been intimately associated since 1890, Trendelenburg, by his writings, having popularized pelvic elevation, or, as it is now commonly called, "Trendelenburg posture." But because of the high primary mortality during the early period when the operation was practiced, two thirds of the women operated upon dying of shock or of peritonitis and sepsis, the operation did not receive general adoption; especially so since it was shown that the freedom from recurrence, which was hoped for, was an illusion. Freund's first patient died of recurrence one year after operation.

The consequence was that operators turned to the vaginal operation of Czerny (1879), which gave a comparatively low mortality.

The technique employed by Freund at his first operation briefly was: Irrigation of the uterine cavity with a 10 per cent carbolic acid solution; pelvic elevation of the patient, so that the head was lower than the pelvis; opening of the abdominal cavity from the symphysis to the umbilicus. The intestines in the true pelvis were held back by an abdominal gauze pad, and then the uterus was pulled upward by a suture passed through the body. Next, the broad ligaments were tied off in continuity, in three parts — first the tube to the ovarian ligament, then the ovarian ligament to the substance of the round ligament, and finally the base of the broad ligament; the last suture was carried down from the round ligament, through the anterior vault to Douglas' pouch. After this the bladder vaginal vault, and back again through the posterior vaginal peritoneum was cut through, the bladder pushed off, and the anterior vaginal vault opened. After cutting through the posterior peritoneum (Douglas' peritoneum), the posterior vaginal vault was similarly opened, and then the three ligated

broad ligament parts severed. In this way the uterus was severed from all its attachments. After irrigating the pelvic cavity with carbolized water, the sutures were drawn tautly through the vaginal opening, which brought the anterior and posterior peritoneal surface to coaptation, so that a row of interrupted sutures held them together.

Different modifications are mentioned, devised by various operators, to avoid injury to the ureter and to control bleeding from the uterine artery. The first surgeons who avoided "mass ligatures" were Kolaczek (1881), Reuss, and later Rydygier.

Freund recognized the faulty position of the operation, as devised by him, in his inaugural address before the International Medical Congress, held in London in 1881; not because of the high primary mortality, but chiefly because no better ultimate results were obtained than by vaginal hysterectomy as practiced by Czerny. But that Freund recognized, from a pathologic-anatomical point of view, that the abdominal extirpation was the more rational, is shown by the proposition which he had made through Linkenheld in 1881, that not only the uterus, but in connection with it the pelvic glands, should be extirpated. And the "mass ligatures" should be dispensed with.

In 1881 Bardenheuer reduced, by his method of vaginal drainage, the primary mortality from more than 70 per cent to 33 per cent.

Still not much progress was made, because of the unfavorable ultimate results, and even the primary mortality was too great, until in 1891 a change was brought about, principally through the efforts of American surgeons — Polk, assisted greatly by Baer, promulgating the advantages of the Bardenheuer drainage and the necessity of Trendelenburg's pelvic elevation. Polk took advantage of Stimson's method of isolating and separately tying the uterine artery, as was taught by Stimson in 1889.

The greatest credit, however, is given to Clark (1895) for his contribution toward bringing about a proper technique in the radical operation. Clark's writings are especially valuable because of the excellent drawings accompanying his description, which for that period have not their equal in literature. The only work worthy of mentioning alongside

<sup>1</sup> We wish to acknowledge to the publishers our thanks for the privilege of reproducing these illustrations.



of Clark's is an article by Mackenrodt, of Berlin (1894).

Almost simultaneously with Clark, Rumpf (1895) and Ries (1895), independently of each other, described two different methods of total extirpation, which, in their own way, showed a decided advancement in technique. By comparison of the three different methods, that of Clark and Rumpf is nearer to the technique generally used today than is Ries'. By the latter's technique the parametrium could not be sufficiently removed. To Ries' credit it is, that he insisted upon the necessity of extirpating the glands.

In Germany it is Wertheim who, by his persistent work, brought to full credit again the abdominal total extirpation.

#### SPECIAL TECHNIQUE

1. *Preparation for operation.* The bowels must be thoroughly emptied: castor oil given in malted beer is to be preferred, and soapsuds enemata; occasionally, when castor oil is not borne, Epsom salts is used.

The patient is given a tablespoonful of castor oil as soon as she enters the hospital. On the day before operation, another tablespoonful of castor oil is given, and only fluid diet. During the afternoon before the operation the pubis is shaved, after which an enema of warm soapsuds,  $1\frac{1}{2}$  litres, is given; and after this has been very effectual, a warm bath is given. Then the woman is put into a freshly prepared bed and an application of 70 per cent alcohol is placed upon the abdomen and genitals, which is held in place by a large "T" binder. The application is changed several times. Over night this is changed for a sublimate application, which remains on the patient until the time of operation. The women are not permitted to get up again nor to use the general toilet. Vaginal douches of peroxide of hydrogen or sublimate, according to the degree of purulent secretion, are given. Half a gramme of veronal is given during the night to overcome restlessness.

If the women are unusually weak, some modification of the preparatory treatment may be desirable.

2. *Narcosis.* Women among the better classes are not so readily made insensitive to surgical interventions by lumbar anæsthesia as are women of the ordinary classes — the working class. If the effect desired is not obtained, so that inhalation anæsthesia must be resorted to, the accumulated action of the several poisons — scopolamin, with morphin; novocain, with or without adrenalin; the drugs used for inhalation anæsthesia — all combined, have a more dangerous effect.

If, however, the lumbar anæsthesia is perfect, it is so much superior that the occasional omission of its effect is not likely to eliminate its use in practice. This is especially the case in cancer operations, since the stomach and kidney functions, important factors, are not impaired by spinal analgesia.

The proper technique of lumbar anæsthesia is of the utmost importance. The method in use is: One hour before operation, the woman receives subcutaneously 0.01 morphin and 0.0003 scopolamin. The evening prior to operation, 0.5 to 1.0 of veronal is given. Stovain is used for the spinal injection. Adrenalin has been discontinued.

The injection is made with the patient in a sitting posture, the spine well curved. The needle is inserted in the space between the second and third lumbar vertebrae. No weight is attached to the quantity of spinal fluid withdrawn. As soon as the fluid comes out clear, the syringe which contains the stovain is attached to the cannula; then the fluid is drawn into the syringe barrel, so as to mix it with the stovain. It is now injected. There is no risk in turning the patient at once into the dorsal position or into pelvic elevation if one takes the precaution to sharply flex the neck. Antiphoes may be put into the ears, to prevent the patient from awakening from the "twilight sleep."

3. *Disinfection and vaginal preparation of the carcinoma.* The disinfection of the abdominal parietes does not differ from that used for other laparotomies. Iodine, too, is used; but before the iodine painting, the abdomen is thoroughly washed with benzine and sublimate alcohol.

Opinions differ as to the vaginal preparation of the cancer; for instance, Krönig and Döderlein fear curetting, because it may disseminate carcinoma germs into deeper structures, and, on the other hand, those already present there cannot be destroyed by curetting.

In Bumm's clinic they believe it is best to rapidly destroy all breaking down cancerous structure with a sharp curette, or, under some circumstances, with scissors, and then put onto the surface a hard eschar, with actual cautery (Paquelin). Care must be taken not to cauterize too deeply, if the cancer is in an advanced stage, because of the danger of injury to the rectum and bladder.

After cauterization, the vagina is first cleared with alcohol and then with sublimate; it is then dried and a 5 per cent nitrate of silver solution is poured into the vagina, and allowed to remain in contact a short time. The nitrate of silver, independently of its cauterizing effect, forms a coagulation layer over the carcinoma and vaginal wall, which, at least temporarily, prevents germs from the interior from penetrating through it. Bacteriological tests have shown the superiority of nitrate of silver for that purpose. After removal of the superfluous nitrate of silver solution, the vagina is tamponed *tightly* with vioform gauze, so as to lift up the uterus and ureters; to the end of the gauze a clamp is attached, which protrudes from the vulva so that it may be withdrawn readily when desired.

Nurses and assistants who were in any way connected with the "preparatory operation" should not, if it can be avoided, assist at the radical operation. If the surgeon himself found it desirable to do the preparatory operation, the customary pre-



cautions as to asepsis should be carefully looked after between the two operations.

Neither the instruments used nor the room in which the preparatory operation was done should be used for the final operation.

4. *Abdominal incision; care of the abdominal parietes and isolation of the field of operation; pelvic elevation.* The best method of making the abdominal incision so as to secure adequate exposure of the field of operation is still a mooted question.

In the Imperial University clinic the ordinary median incision is used, from the symphysis to the umbilicus, or a little above this when necessary. Occasionally the insertions of the recti muscles at the symphysis are nicked (slightly incised). This then gives sufficient space to work properly.

To avoid the danger caused by soiling the edges of the wound with carcinoma elements, the entire wound is protected with a double fold of a gauze napkin, which envelops one layer of Billrothbist (similar to oil silk). This is sewn onto the abdominal wall by three through-and-through sutures (Fig. 1). The other side is treated similarly, so that no part of the abdominal wound is left exposed. This protection also prevents too much pressure by the abdominal retractors.

To hold back the intestines, a very large compress, composed of several thicknesses of gauze, two metres long and ten centimetres in width, is used. Such large gauze barrier gives better satisfaction than numerous smaller compresses.

The operation is done with the patient in extreme pelvic elevation. The shoulder braces on the table are provided with inflated rubber cushions, and the head rests on a movable head-rest, permitting the head to be put at any angle.

5. *General procedure of the operation; exposure of the field of operation; position of the assistants.* The position of the operator must be changed during the operation to give better success to a particular field of work. The operation is begun by the operator standing on the right side of the patient, to do the work on the left side. A large abdominal retractor (Stöckel's) is used at the lower angle of the wound, and is left in place during the entire operation. The abdominal wall of the left side is held well back by an assistant with a large retractor, so that the base of the ligament is exposed, particularly so when an assistant standing behind the operator pulls the uterus well over to the right side (Fig. 2). Now the left spermatic vessels are tied and the anterior peritoneal fold of broad ligament split, the ligament is unfolded, the left ureter exposed, the uterine artery searched for and tied, and finally the ureter is traced to the bladder and isolated and the bladder pushed off the cervix.

Now the operator and assistants reverse their positions, and a similar technique is used for the opposite side. Then the peritoneum of Douglas' pouch is cut, the rectum pushed off, the vagina severed, and the extirpation of the parametria consummated. After the extirpation, the operator

resumes his former position on the right side of the patient and the peritoneal toilet is attended to — the suturing of the vagina to the peritoneum anteriorly, the bladder, and posteriorly to Douglas' peritoneum; the tying of clamped parts, the extirpation of glands, and the uniting of the peritoneal folds of the broad ligaments.

During the entire operation the principle of simplicity should be predominant; only one assistant may come in direct contact with the wound.

6. *The separate steps of the operation.* (a) Opening and Topography of the Parametria.—The several methods used by others — and here again Clark's method is highly spoken of, and also that formerly used by Bumm — are first discussed briefly.

The present technique is as follows: The uterus is grasped with two pairs of volsellum forceps, one on the left and one on the right uterine end of the tubes, and pulled toward the symphysis and to the right. By pulling the left adnexum the left infundibulopelvic ligament is made taut, when the spermatic vessels are readily seen; they are grasped between two clamps, cut, and tied at once. Now the uterus may be drawn toward the promontory of the sacrum, so as to bring the anterior broad ligament fold well into sight. With a crescent-shaped incision the anterior fold of the ligament is split over and past the round ligament, and the incision is continued in the vesico-uterine plica (peritoneum) to the median line (Fig. 3.) The peripheral end of the round ligament is immediately tied with a catgut, which material is used throughout as intraperitoneal ligature and suture material. From the split in the anterior fold of the ligament one can now bluntly dissect his way with the finger and forceps, unfolding the loose connective tissue of the ligament. These layers of connective tissue diverge in the direction of the ureters and large vessels. It is therefore important that one separate them in that direction, because, by the observance of this, one may unfold the ligament more readily without injury to small blood-vessels, to bring into view the ureter, which is attached in a hanging position to the median fold of the ligament, and it is best to let it remain in that attachment. In the depth, as in an anatomical specimen, the large vessels may be seen and readily traced to the bifurcation of the iliac artery (Fig. 4).

Because the tissue of the ligament is so easily separated in its long direction, the bundle of uterine vessels becomes conspicuous, since its direction is transverse to the separated connective tissue fibres. The uterine vessels over the ureter must be isolated, so that the branching off of the superior vesical artery is also brought into view. Only in exceptional instances, during the dull separation of the ligament tissue, the ureter is drawn over with the lateral fold of the ligament. With this possibility one must count, so that one does not unnecessarily dig into the depth at the median fold, because the ureter hangs rather superficially on the lateral fold. How important it is not to continue with the operation until the ureter is clearly seen was shown in an instance in



which the ureter remained attached to the lateral fold, and was therefore not found in its typical position. It was decided to first locate the uterine artery, to find the ureter from that point. In doing so, the non-exposed ureter got into the clamp, which was intended to catch the uterine artery, and was severed.

Inflammatory changes in the ligaments may make the blunt unfolding very difficult, inasmuch as the more or less infiltrated tissue will cause a rigidity, and more intimate adhesions to it and the ureter and vessels. The presence of much fat will also cause much difficulty in finding the ureter, and one must be very careful in these cases so as not to get into wrong strata.

(b) *Ligation of the Uterine Artery.*—If the ureter and blood-vessels have been exposed according to the method described, the ligation of the uterine vessels causes no difficulty. The vessels crossing the ureter transversely are caught between two clamps, cut, and ligated. In tying the uterine artery we must endeavor to avoid the superior vesical artery. The uterine artery and the superior vesical artery originate, as a rule, in a short common trunk from the hypogastric artery; for this reason one should not tie too closely to the hypogastric artery, but rather median from the branching off (bifurcation) of the superior vesical artery. Gangrene of the bladder may ensue from the tying of the superior vesical artery. Bumm saw a fatal secondary hæmorrhage from the hypogastric artery, because the uterine artery, before the branching off of the superior vesical artery, was tied at the short common trunk, too near to the hypogastric artery.

When the uterine vessels passing over the ureter have been ligated, one must — to this Bumm calls special attention — see if, beneath the ureter, there is another deep uterine vein (Fig. 5). If one is not careful about this — the vein being frequently present — a very abundant hæmorrhage may take place, since it is injured easily, and then may cause considerable complication, from an endeavor to control the bleeding, by further injury to the adjoining venous plexuses.

(c) *Exposure of the Ureter to the Bladder.*—After the uterine vessels have been cared for on the left side, the ureter is dissected out of its parametrial embedment and traced to its insertion into the bladder, which is then pushed off from its underlying structure. Until the ligation of the uterine vessels has been completed the operation is comparatively simple, whether the cancer is in its beginning stages or further advanced. On the other hand, the isolation of the ureter from its parametrial bed and its insertion into the bladder, from a technical point of view, varies very much. Whether the isolation of the lower end of the ureter is technically difficult or easy will depend on the greater or lesser carcinomatous changes in this location.

If one holds up the uterine end of the severed uterine artery with a pair of forceps and draws it

toward the uterus over the ureter (Fig. 6), one can see that the ureter is attached to the cervix by thin connective tissue bands, which go from the uterine vessels to the cervix; these bands are put on slight tension, and define themselves sharply from the ureter when the uterine artery is lifted up, and may be severed without difficulty or risk, with scissors, close to the ureter.

The connection between the vessels and the ureter being severed, the ureter can now be worked out of its parametrial bed; the vessels in toto with the lymphatics and glands remain in contact with the uterus. Usually it is possible to isolate the ureter entirely from the bladder by blunt dissection, by lifting it with a pair of anatomical forceps. Occasionally, however, when it is adherent by inflammatory infiltrated tissue, scissors must be used to sever the connection of the ureter from the more intimate adhesions from the paracervical tissue, before it enters the bladder. But whatever can be separated bluntly should be done so. Particularly the lateral region of the ureter, at its entrance into the bladder, requires much care, because of the frequently distended veins of the vesicovaginal plexus.

The separation of the bladder from the cervix at the insertion of the uterus is made easier if the bladder is held forward with a broad retractor. By this the bands of tissue which come from the cervix, partly above and partly below the ureter, are put on tension, and the ureter is plainly visible at its insertion into the bladder. In this way the vagina can be fully isolated anteriorly.

(d) *Venous Hæmostasis.*—Generally, by following the directions given, the veins in the depth of the pelvis, leading to the median iliac vein, may be avoided. One can usually avoid venous bleeding if one holds to the rule, after isolating the ureter, ligating the uterine artery, pushing off the bladder on the left side, and thus, having clearly exposed and brought into view the left half of the urinary tract, let the base of the broad ligament and the deep-seated veins alone, and turn to the right side of the pelvis and do similar work. The attack on the roots of the parametria, and with that the opening of the deep venous plexuses, should be left as the last step of the extirpation, after the arterial blood supply to the vagina has been also cut off.

Should one be unfortunate, however, and cause an injury, it is best to follow Bumm's advice, and make no attempt to control the bleeding by an application of clamps or mopping with pads. Such procedure may only increase the hæmorrhage by injuring additional veins. Use compression: upon the bleeding surface place carefully an abdominal pad and continue the operation in the regular way. It is likely that when the extirpation has been completed the hæmorrhage will have ceased, or that only an occasional clamp need be applied, which can then be done without risk, since, after extirpation of the uterus, the bladder, the ureters, and the large vessels are in view. Keep cool during the work.



(e) Incision of the Posterior (Douglas') Peritoneum; Pushing Off of the Rectum from the Vagina.—When the ureter on the left side, to its insertion into the bladder, has been isolated, and the bladder itself separated from its underlying structure, so that not only the cervix is bared in front, but also the vagina isolated far downward, the position of the operator is reversed and a similar technical procedure is followed on the right side. The anterior semilunar-shaped incision is, of course, made so that it will meet the similar incision in the vesico-uterine plica of the opposite side.

When the bladder and ureter have also been liberated on the right side, the first principal part of the operation is done; the urinary apparatus has been separated from the organ to be extirpated, and the four sources of blood which supply the uterus have been cared for. Now the peritoneum posteriorly between the spermatic pedicles is cut through. To do this the uterus is pulled vigorously toward the symphysis, which elevates Douglas' pouch. The incision is carried from one pedicle of the infundibulopelvic over the folds of Douglas, about on a level with the vaginal portion of the cervix, to the pedicle of the spermatic vessels of the opposite side. Usually the peritoneum can be pushed off bluntly, which causes the rectum, which has frequently been pulled up also, to sink. Injury to the ureters is easily avoided, since they are exposed on either side (Figs. 7 and 8). It must be borne in mind, however, that laterally they are within one half centimetre of the posterior peritoneal incision. Injuries of the ureters have, therefore, been of repeated occurrence at that point.

If the peritoneum is not pushed off easily, a blunt separation should not be insisted on, because of the risk of breaking through into the vagina.

After complete separation of the posterior peritoneum, we have made the preparation for extirpation of the parametria.

(f) Extirpation of the Parametria.—It is to Mackenrodt's credit that, as early as 1894, he persistently insisted upon the necessity of excising the parametria extensively. He demonstrated as the result of his anatomical studies the practical possibility not only of isolating the ureters in the parametria, but also of extirpating the parametrium beyond the ureter.

The angular clamps used by Wertheim to close off the carcinomatous crater in the vagina necessarily grasp some parametrial pedicle. This is not desirable, and to overcome it, Sigwart, on the request of Bumm, had a vaginal clamp constructed which makes it possible to clamp the isolated vaginal tube some distance beneath the carcinoma without the possibility of also getting the parametria in its grasp (Fig. 9). During the application of the clamp the physician must keep the ureters and bladder out of the way, while the operator controls the posterior blade with his hand, so that the rectum is not grasped in case it is not pushed off quite far enough. Now one can push off the rectum

laterally, quite extensively, with the finger. Having grasped the uterus with forceps, the cancerous area being well occluded, the entire specimen is held only by the broad roots of the parametria (Fig. 9). When one now pulls with the clamp, the roots of the parametria are shown as broad masses and may be excised to the pelvic wall, in part bluntly and in part with scissors. The bleeding parts are at once caught.

In taking out the parametria it is advisable to first attack the good side, since after extirpating one side the mobility of the other is markedly increased, even if it is markedly infiltrated; so that excision is made much easier. The excision is begun at the anterior parametrial roots, which are best made accessible by holding the ureter and bladder outward and upward as much as possible, while the operator makes strong traction on the vaginal clamp. When the anterior parts of the parametria are severed, the connective and fatty tissue may be peeled out laterally from the rectum, and, gradually progressing toward the posterior roots of the parametria, these may, in part bluntly and in part with scissors, be enucleated and the bleeding areas grasped with clamps.

When the uterus with the parametria has been extirpated, one may see exposed, to the right and to the left in the depth of the pelvis, the levator, covered by the deep pelvic fascia.

As a prerequisite for the proper application of the vaginal clamp, the rectum must be extensively freed, so that the vagina is isolated as far behind as in front, at least to the middle third of the vaginal tube.

If the cul-de-sac of Douglas is obliterated by adhesions, the use of any kind of clamp is not advisable, because the rectum cannot be pushed off satisfactorily. In such cases, the old method of first incising through the anterior vaginal wall is best (the vaginal tampon having previously been removed), and then, with care, because of the close proximity of the rectum, the knife is guided through the posterior vaginal wall. Now the two vaginal edges are coapted and clamped to close off the carcinoma. This part of the operation should be done with exactness, and quickly. After the coaptation of the anterior and posterior vaginal wall, the upper part of the posterior vaginal wall may be separated from below upward with the finger, while traction is made with the other hand on the clamps attached to the vaginal tube.

Mackenrodt is right when he says that the operation really begins when extirpation of the parametria is started. This is the phase which decides the future of the patient. The more radically this is done, the greater the primary mortality. A man who has a very high primary mortality, if he operates really radically, is not to be criticised adversely.

(g) Extirpation of the Glands.—The last act of the operation, before closure of the peritoneum, is the "search for glands." Surgically it would be more correct to begin the operation peripherally, taking



the iliac and hypogastric glands with the lymphatics going toward the uterus, and, without injury to any of these structures, extirpate them in continuity with the parametria and uterus; but this is not generally possible without much risk because of technical difficulties, as one will realize who has worked on difficult cases.

The intervention for the removal of glands should be begun at the periphery, extirpating them with their fatty and connective tissue. Frequently, beginning with the gland at the bifurcation of the common iliac artery, a whole chain of glands along the external iliac, going to nearly beneath Poupart's ligament, may be extirpated in continuity.

To extirpate the lymphatic glands, the thin membrane which surrounds and attaches them to the underlying vessels must be incised, then bluntly enucleating the gland with its surrounding fat. This is not, however, always possible.

If one has loosened the glands, they are still attached by filamentous bands along the vein which are put on tension when it is attempted to enucleate the gland. These bands must not be torn nor cut; they can usually be traced for some distance, often to the gland pocket close to the uterus. As a rule several ligatures must be applied, because the bands leading to the glands bleed easily.

After the glands have been found and enucleated, and the ligatures applied to even the smallest bleeding vessels so that the wound is dry of blood, the closure of the peritoneum may be done.

On general surgical principles, drainage of such a large wound surface would be proper. Not so in our case, for obvious reasons.

Without describing the different methods that have been used by various operators, the technique now used at Bumm's clinic is described as follows:

To guard the bladder, the peritoneum of the bladder is attached to the edge of the anterior vaginal wall with interrupted catgut sutures. So we obtain hæmostasis of the anterior vaginal wall and also complete covering of the bladder. This is important for the function of the bladder, aiding in the prevention of paresis. The lateral angles of the vagina require particular attention as to hæmostasis, and this part of the vagina must be sutured with exactitude. In close proximity to these lateral vaginal angles the ureters enter the bladder, hence, *be careful!*

Next the bared rectum must be cared for, which is done in a similar manner, by attaching the Douglas' peritoneum with interrupted sutures to the posterior vaginal wall. Care must be taken not to enter the needle too deeply, lest a fistula develops subsequently.

As the result of the two rows of sutures the wound surface in the pelvis has been greatly reduced in size, so that to the right and left there is only a peritoneal gap from the pedicle of the spermatic vessels to the angles of the vagina, behind each of which the ureter passes into the bladder (Fig. 11). The median peritoneal fold forms nearly a straight line and

carries, at least in its upper part, the still attached ureter. The lateral border of the peritoneum forms, at the point of ligation of the retracted round ligament, a blunt angle, so that, without much retraction of the peritoneal borders, a good view may be had of the still open wound surface, the vessel triangle.

After the entire vaginal opening has been sutured to the peritoneum, the ligating of the parts of the parametrium last clamped is attended to. The hæmostasis here may cause considerable technical difficulty, particularly if with the parametria all the fatty tissue and the entire paracolpium were extirpated; but an *absolute, complete* hæmostasis is necessary if one desires to avoid tampon drainage.

In a few instances in which the complete hæmostasis was impossible, drainage applied according to Amann's method was employed. A passage was made for the tampon from the deepest part of the wound surface, between the vaginal wall and rectum, which was brought out laterally to the vulva, near to the anus. It is better, however, to avoid this rather complicated form of drainage.

(h) Tampon Drainage or Closure of the Pelvic Peritoneum.—During former years intraperitoneal drainage of the pelvis was adhered to on general principles. A vioform gauze strip six meters in length was carried with a long curved dressing forceps from above downward into the vagina, so that about half of the gauze was in the vagina and the other half in the true pelvis, to cover completely the intraperitoneal sutures. The primary results at once became better. But for various reasons this has been discontinued unless infectious material comes in contact with the peritoneum.

If no drainage is used, the peritoneum is united with a continuous catgut suture from one spermatic pedicle to the other, by which the bladder peritoneum is joined to the Douglas' peritoneum. If the pelvic peritoneum is somewhat scant it is best to use interrupted sutures, since a better coaptation can be secured with interrupted sutures. The abdominal wall is closed in three layers: peritoneum and muscle with continuous catgut, the fascia with interrupted silk, and the skin with Mitchel's clasps. The time required to complete the operation varies from one and a quarter to two hours.

To compress the parametrial wounds as much as possible, to prevent even minimal bleeding, the vagina is tamponed with vioform gauze, which is removed after 24 to 48 hours. A retention catheter is used in every case. To cover the abdominal wound a coating of collodion is used, and, for at least 24 hours, a very tight abdominal binder with pressure. A vulval pad, to protect and hold in place the vaginal tampon, and over this a "T" binder, are applied.

7. *After treatment.* Although the favorable result of the operation is decided on the table, yet much depends upon the after care and treatment.

Every patient is placed in a thoroughly warmed bed, and under an electric light heat dome, until she



is in profuse perspiration, which indicates body reaction. If there is indication of heart failure, 1,000 to 2,000 cc. saline infusion is given subcutaneously, to which may be added 1 to 2 grammes digalen or 10 to 20 minims of a 1:1000 adrenalin-chloride solution. Attacks of heart failure may occur even several days after operation, particularly at the time of the first defecation; hence care must be used in the administration of laxatives, particularly in weak women.

Post-operative bronchitis and hypostatic pneumonia are best guarded against by the omission of inhalation narcosis, and the use of lumbar analgesia instead.

If tampon drainage is used, the pelvic tampon should remain five days, and should be removed piecemeal — a short piece twice daily after the first 24 hours. The terminal end of the tampon should always be enveloped in a large, loose pad of sterile gauze, which increases its capillary drainage ability.

A too early removal of the pelvic tampon may cause a fatal result, since the secretion may be quite profuse, and if the tampon is removed the vaginal wound closes rapidly, no exit being afforded to the secretion.

Cystitis is nearly always a necessary evil, complicating radical operations for uterine cancer. The use of the retention catheter for six days diminishes materially the severity of this complication. The use of internal remedies is preferred, as urotropin, helmitol. Large quantities of water should be drunk. Bladder irrigation is a treatment of last resort, since in this class of cases it is considered risky, by causing an ascending ureteritis and pyelitis. If irrigations are used, 2 per cent boric acid solution, or in obstinate cases a 1 to 5 per cent collargol solution, is advised.

8. *Complications during operation.* It is not always possible, even with the aid of cystoscopy, to recognize advanced involvement of the bladder or encroachment of the carcinoma around the ureters. It may not be possible to strip the bladder from the cervix because of encroachment of the cancer on the bladder wall, or it may be impossible to isolate the ureter because of its tight embedment in carcinomatous parametrium.

The "walling-in" of a ureter in carcinomatous tissue is usually manifested by marked ureteral dilatation above its parametrial part. If the ureteral wall is much injured, it is preferable to resect the terminal end and implant the proximal end into the bladder, because if a ureteral fistula ensues, the complication is more serious than the primary additional intervention of implanting, and, by resecting and implanting, the exsection of the carcinomatous parametrium is accomplished more readily.

The technique which is now utilized for ureteral implantation is: The ureter at its renal end is provided with two silk guy sutures. With a pair of uterine dressing forceps passed through the urethra to the fundus of the bladder, where an opening is



Fig. 1. Protection of the abdominal parietes.

made, the sutures are grasped and the ureter is drawn into the bladder a distance of from 1 to 1½ cm. The ureter is then attached by a few sutures which catch the ureteral wall only superficially. The main support to the ureter is obtained by high fixation of the bladder, so forming a sort of bed, upon which the ureter rests. When the edges of the bed are united above the ureter, a muff is formed, which surrounds the ureter and guarantees certain healing. As a last guard of the implantation area an exact peritoneal suture is made. The silk guys, drawn through the urethra, may be sutured to the external genitals (the small labium), or fastened by adhesive plaster. If the ureter has been resected rather high up, the fixation of the bladder to the iliac fossa, as advised by Witzel, answers a good purpose. (The latter procedure has been used by Boldt with satisfactory results.)

If the ureter has been accidentally cut high up, a uretero-ureterostomy, by implanting the renal end into a slit made into the vesical end, gives the best results. In instances in which too much of the distal end of the ureter has been destroyed, so that neither of the operations mentioned can be done satisfactorily, and if the condition of the patient is such that it is too risky to extirpate the kidney, one may tie the renal end of the ureter, and cover the extremity with a close peritoneal suture, leaving the kidney to its fate, either for subsequent extirpation, or, as was the case in such an instance in Bumm's clinic, a spontaneous cure may occur.





Fig. 2. Exposure of the field of operation on the left side. *a*, Round ligament. *b*, Infundibulopelvic ligament. *c*, Spermatic vessels.

If the bladder has been injured, either intentionally or unintentionally, the prognosis becomes graver.

When rectal fistulæ do occur, they usually close spontaneously.

Serious complications from hæmorrhage, with our present knowledge of anatomy (particularly since Kownatzki's contribution on the pelvic veins) and with our present knowledge of technique, should be of rare occurrence. It may occur that during the extirpation of glands the hypogastric artery may be injured, as occurred in one of the cases. If it is evident that the extirpation of carcinomatous glands is too difficult, technically, without injuring the large vessels, it is advisable to ligate the hypo-

gastric artery and vein prior to extirpating the glands.

Injuries to the external iliac vein, too, have occurred in their experience, but were sutured successfully.

9. *The judging of operability.* An accurate bimanual vaginal and rectal examination is essential.

If the cancer is in its early stage, the uterus mobile, the parametria free, without an infiltration detectable anywhere, the case is considered favorable for operation, with a good chance of a permanent cure, by extensive radical enucleation.

In the case of very obese women, the advice also given recently by Franz Zinsser, to operate per vagi-





Fig. 3. Clamping of the spermatic vessels. Line of incision over the anterior peritoneal fold of the broad ligament (shown by the dotted line). *a*, Bladder. *b*, Round ligament. *c*, Spermatic vessels.

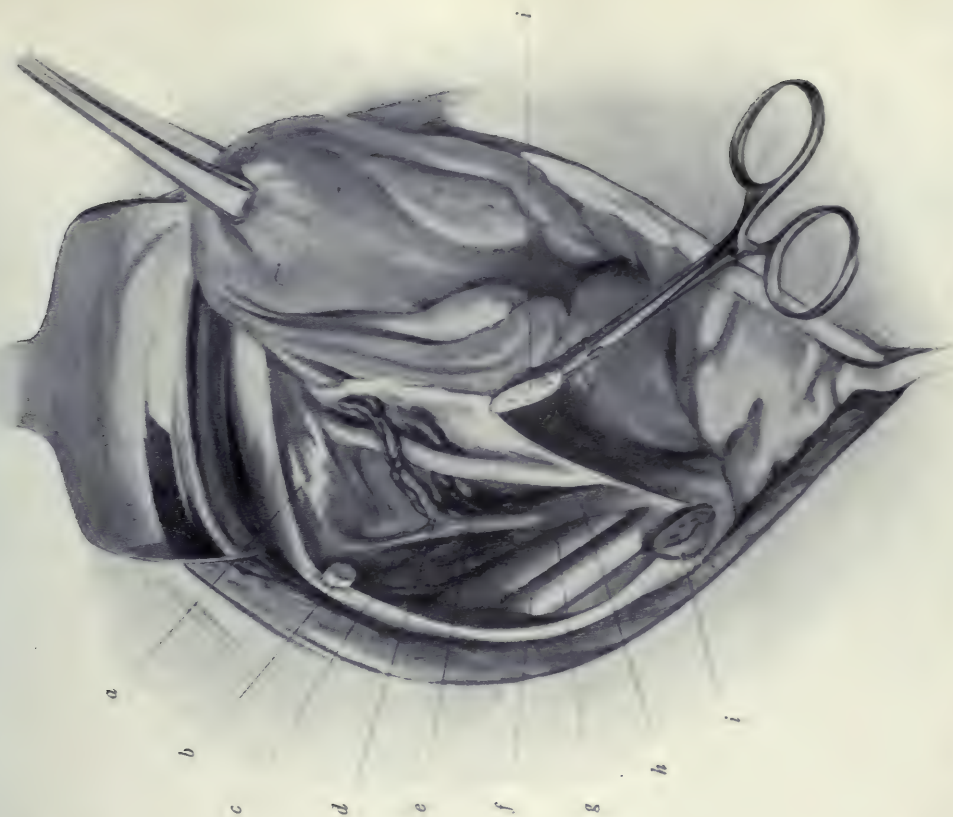


Fig. 4. Topography of the field of operation after unfolding of the folds of the broad ligaments. *a*, Bladder. *b*, Round ligament. *c*, Superior vesical artery. *d*, Deep uterine vein. *e*, Uterine artery. *f*, External iliac artery. *g*, External iliac vein. *h*, Hypogastric artery. *i*, Pedicle of the spermatic vessels.



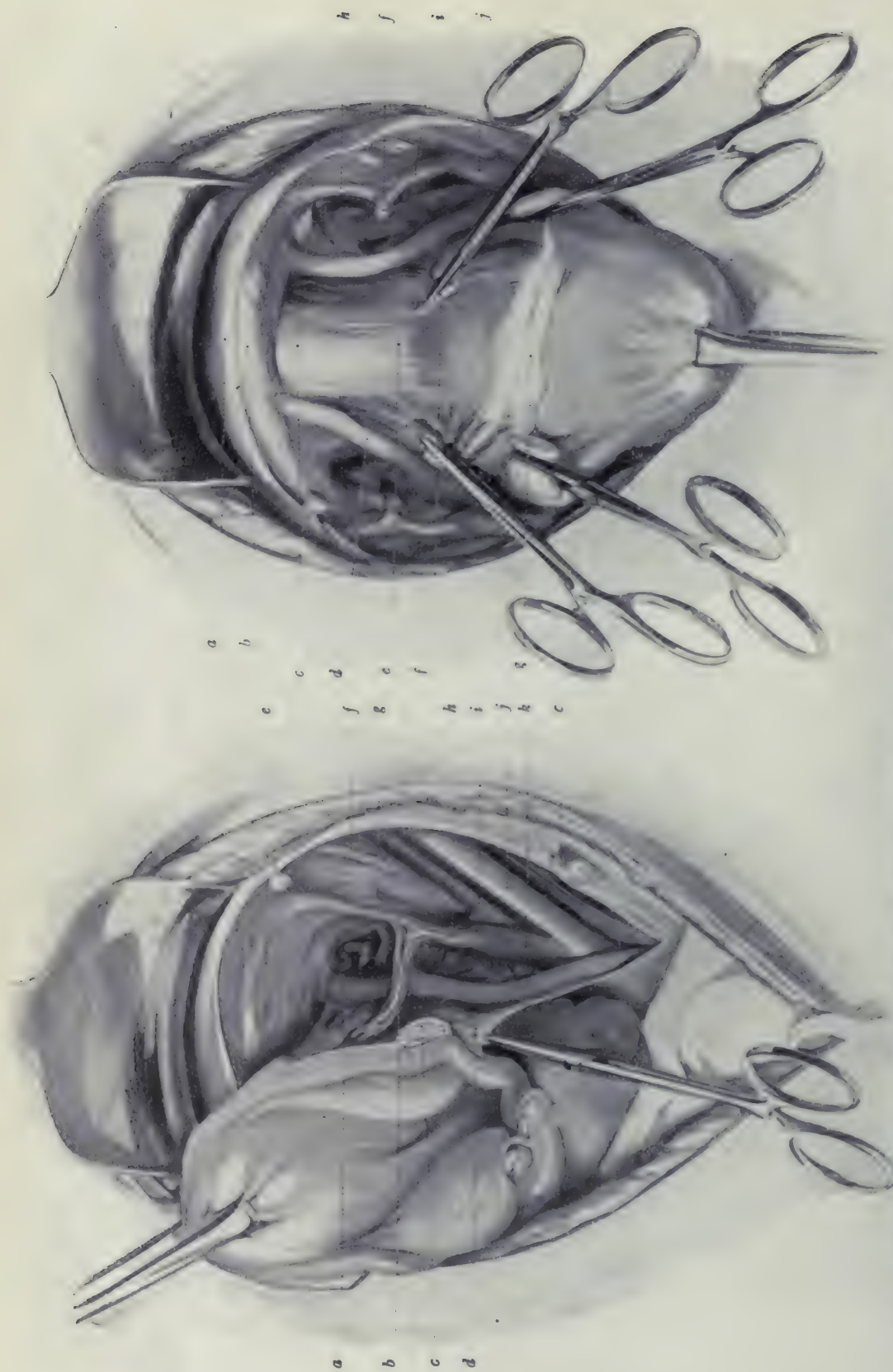


Fig. 5. Topography of the field of operation on the right side. To show the bifurcation of the common iliac artery, the peritoneal incision is carried upward and outward from the pedicle of the spermatic vessels. *a*, Right ureter. *b*, Uterine artery and vein. *c*, Pedicle of the spermatic vessels. *d*, Median fold of the broad ligament. *e*, Bladder. *f*, Obturator nerve. *g*, Superior vesical artery. *h*, Trunk of the uterine artery. *i*, External iliac vein. *j*, External iliac artery. *k*, Hypogastric artery.

Fig. 6. Situation after exposure of both ureters and after pushing off the bladder. *a*, Peritoneum. *b*, Bladder. *c*, Vagina. *d*, Left ureter. *e*, Cervix. *f*, Pedicle of the uterine vessels. *g*, Edge of peritoneum. *h*, Superior vesical artery. *i*, Trunk of the uterine artery. *j*, Hypogastric artery.



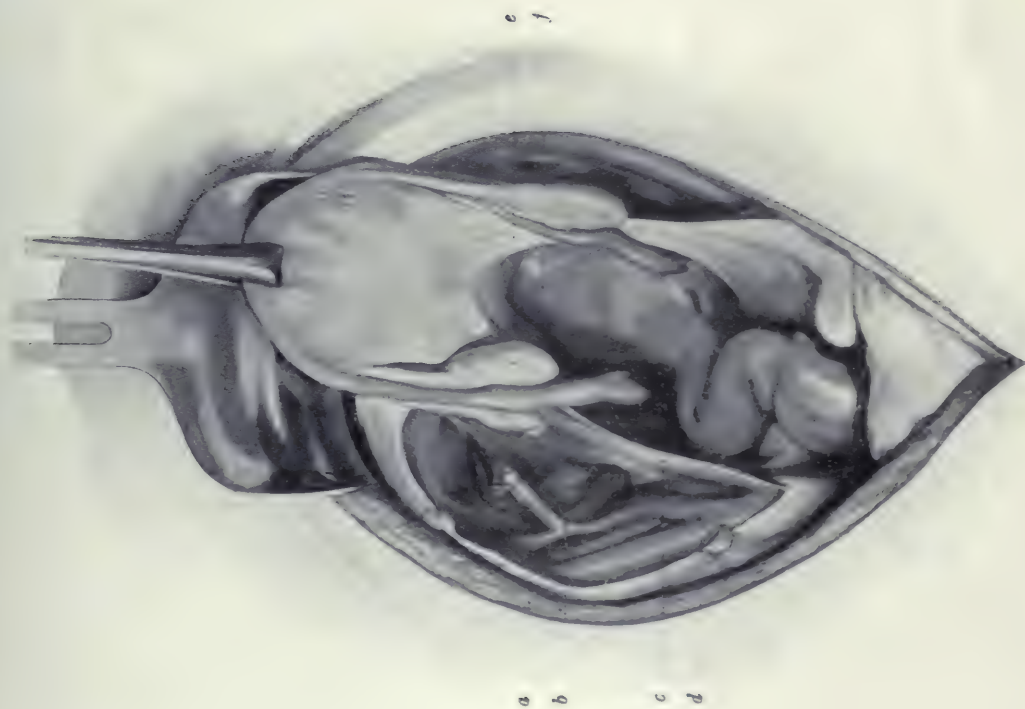


Fig. 7. Line of incision over the posterior peritoneal fold of the broad ligament and of Douglas' pouch (shown by the dotted line). *a*, Superior vesical artery. *b*, Uterine artery. *c*, Ureter. *d*, Bifurcation of the iliac artery. *e*, Fold of Douglas. *f*, Douglas's pouch.

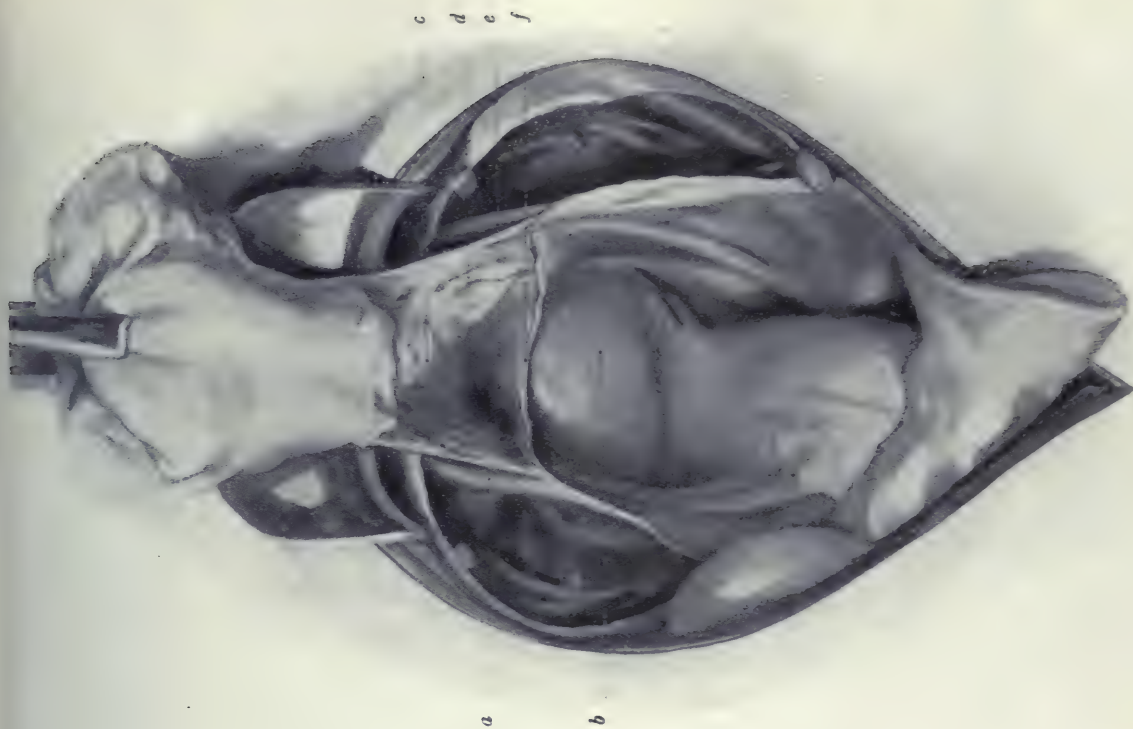


Fig. 8. Pushing off of rectum. Exposure of the cardinal ligaments. *a*, Ureter. *b*, Rectum. *c*, Cervix. *d*, Cardinal ligaments. *e*, Wall of rectum. *f*, Border of Douglas's peritoneum.



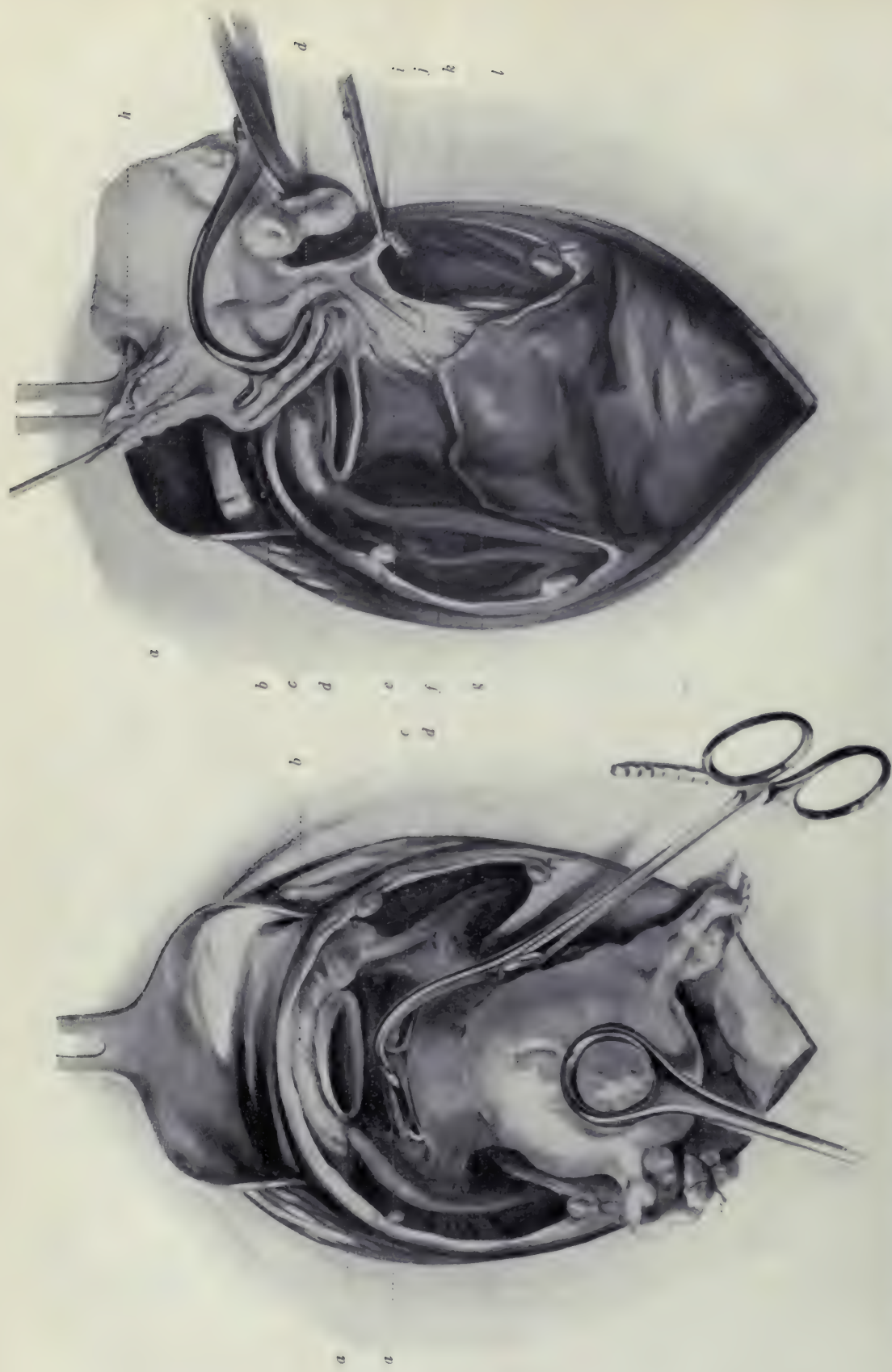


Fig. 9. Application of the vaginal clamp. *a*, Vagina. *b*, Bladder. *c*, Ureter. *d*, Parametrium.

Fig. 10. Extirpation of the parametria. The left parametrium has been severed with its roots; on the right side the entire base of the parametrium is exposed. *a*, Left parametrium. *b*, Peritoneum of bladder. *c*, Bladder. *d*, Vagina. *e*, Rectum. *f*, Uterine artery. *g*, Ureter. *h*, Left uterine artery. *i*, Right uterine artery. *j*, Parametrium. *k*, Border of Douglas' peritoneum. *l*, Posterior root of parametrium.



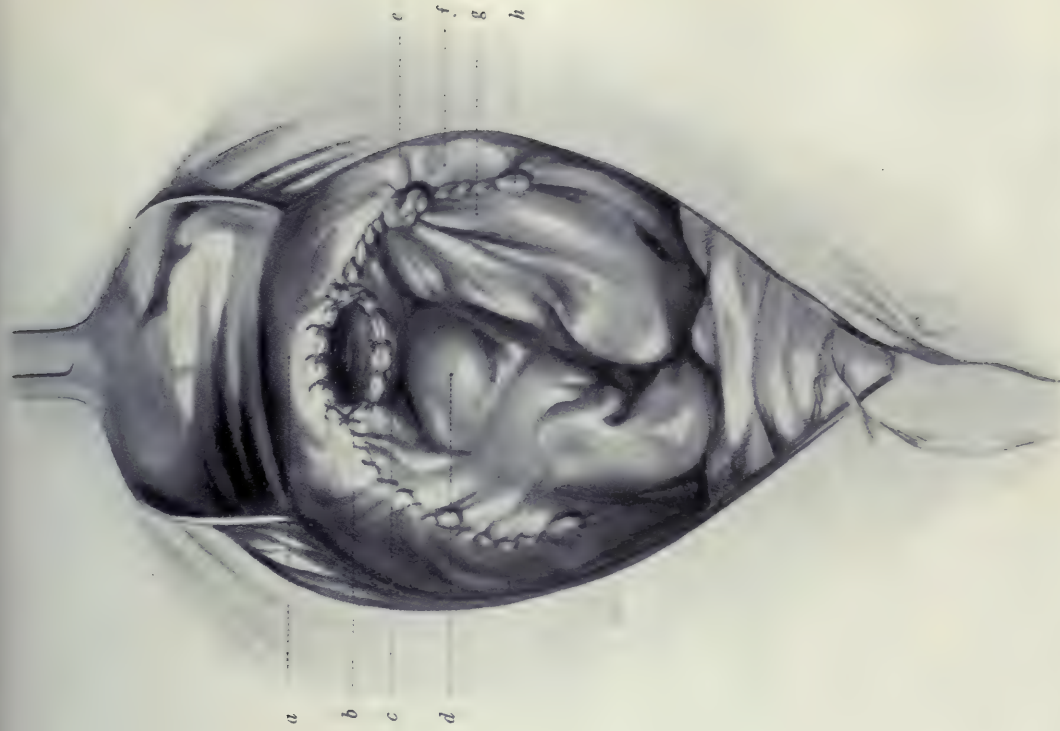


Fig. 12. Peritoneal suture of broad ligament folds. *a*, Bladder peritoneum. *b*, Vagina. *c*, Douglas' peritoneum. *d*, Rectum. *e*, Pedicle of round ligament. *f*, Lateral fold of broad ligament. *g*, Median fold of broad ligament. *h*, Pedicle of the spermatic vessels.

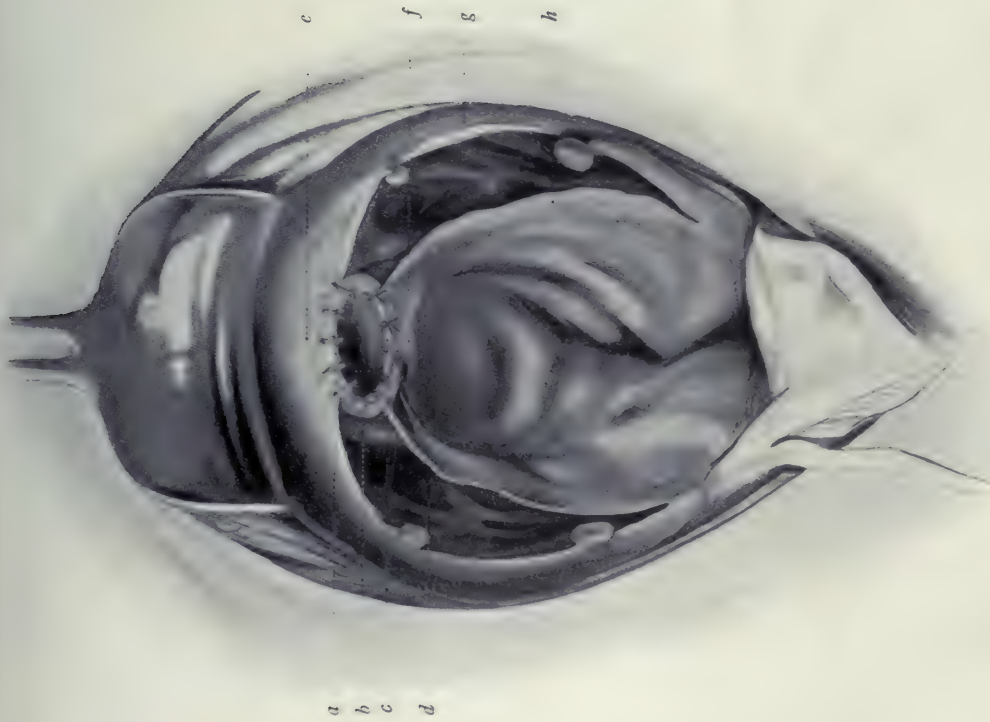


Fig. 11. Suturing of the vagina anteriorly with the bladder, posteriorly with Douglas' peritoneum, whereby the bladder and rectum are covered. *a*, Anterior vaginal border. *b*, Ureter. *c*, Posterior vaginal border. *d*, Parametrial wound cavity. *e*, Peritoneum of the bladder. *f*, Peritoneum of Douglas. *g*, Lateral fold of the broad ligament. *h*, Median fold of the broad ligament.





Fig. 13. Complete closure of pelvic cavity by suturing of the bladder and Douglas' peritoneum over the sutures of the vagina. *a*, Pedicle of round ligament. *b*, Pedicle of the spermatic vessels. *c*, Bladder peritoneum. *d*, Pedicle of spermatic vessels. *e*, Rectum.

nam, if the cancer is in its early stage, may be considered; but in Bumm's clinic the principle is adhered to to operate on every patient per abdomen if at all possible.

If the carcinoma has advanced beyond the boundaries of the uterus, no fixed rules can be laid down. Then the question of operability is necessarily a personal equation — an opinion that each operator forms for himself. The man who is timid and only operates "smooth cases" will have a low percentage of operability, and also a low primary mortality. Both rise, however, as soon as the borders of operability are extended.

The importance of a careful rectal examination cannot be overestimated in judging the operability of a particular case. By it we do not only judge the extent of parametrial infiltration, but also the infiltration of the recto-uterine ligaments. Massive or less infiltrated bands may be felt per rectum, as they diverge and pass toward the pelvic wall, but the infiltration does not quite reach it — a sign, therefore, that the infiltration is still limited to structure, the removal of which is possible from a technical point of view. Such patients should, despite the infiltration, be operated upon.

The propagation of the cancer upon the vagina



and perivaginal tissue for the purpose of judging the operability, since we can also by the abdominal route extirpate the entire vagina with the subvaginal tissue to the vulva, *should not decide against operation.*

While a cystoscopic examination cannot always clear up the operability from that field, still in every instance of carcinoma the examination should be made; because if that shows the bladder to be involved, one need not subject the patient unnecessarily to an abdominal section, unless he has decided to resect a part or the whole of the bladder.

In addition, the cystoscope must give us information as to the function of the kidneys, especially the ureters. If one of the ureters is found to be non-functionating, or its function diminished, we may expect difficulty in isolating that ureter. But to judge the operability alone by that would be wrong, since the ureter itself is seldom affected by cancer. Moreover, if the other ureter and kidney functionate normally, one may still operate and get a good result by sacrificing the kidney on the affected side.

One should not operate on carcinomatous patients in the presence of febrile temperature, since streptococci may be present, not only in the carcinomatous tissue but also in thrombosed vessels of the ligaments and in suppurating glands. A non-observance of this precaution may be penalized by death of the patient of peritonitis or sepsis.

10. *The primary results of operation.* Of 269 patients operated upon in Bumm's clinic, in Halle and in Berlin, 138 were operated by the older technique. The number of deaths was 41 or 29.7 per cent. Since the use of the present technique (with which, however, pelvic drainage was used until the autumn of 1910), of the 131 patients thus operated upon, 28 died, or 21 per cent. These were all cases of cancer of the cervix. Cancer of the body of the uterus is not included.

#### CAUSES OF DEATH

Five women died of collapse and shock. But, of these 5, it is believed 2 died of an accumulation of poisons used to bring about narcosis, since in 2 lumbar anæsthesia had no effect, so that inhalation narcosis became necessary from the beginning of operation. One must be guarded about the prognosis in very obese persons and those more than 55 years old. Nine women died of peritonitis, within eight days following operation. Seven died of septic cellulitis. In 6, the direct cause of death was pulmonary embolism.

It is evident that women of advanced age do not stand the operation so well as younger women, since the mortality in women more than 50 years

old was 34 per cent, whereas for those under 40 years it was but 12 per cent.

Of 60 patients in whom the parametria were not infiltrated at all, or only very slightly, the mortality was 6.6 per cent — only 4 deaths.

The greatest mortality was among women upon whom an intentional or unintentional injury took place. There were 10 such patients, of whom 6 died.

Of the 71 women who had parametric infiltration, there were 14 cases in whom the carcinoma actually "walled in" the ureter. In one the ureter was resected, and in 13 it was peeled out of the infiltrated carcinomatous parametrium, and only once a ureteral fistula resulted. The patient in whom the ureter was resected died, likewise 3 of the other 13 women, so in 9 of these cases the ureter recovered from the traumatism caused by difficult enucleation. Such good results can be ascribed, not only to the careful technique during enucleation, but to the omission of subperitoneal drainage of the wound cavities.

There were 7 vesical fistulæ, of which 4 occurred spontaneously and 3 remained after injury to the bladder; among these there was one vesico-abdomino-parietal fistula. The greater number of these fistulæ closed spontaneously.

The rectum was injured to the mucosa two times. One of these patients had an advanced carcinoma and died of suppurative cellulitis. In one case the rectum was opened a distance of 3 cm. while pushing off the vagina. The patient made a good recovery without a fistula.

Twice a rectovaginal fistula resulted, which closed spontaneously.

The taking place of suppuration of the abdominal wall must be regarded as a very unpleasant occurrence, retarding convalescence; in one instance it resulted in death. In 17 per cent of the operations it occurred. During the first days the wound appears perfectly normal, but during later days, somewhere about the wound — usually at its lower angle — an inflammatory area is noticed, at which the manifestation of an abscess soon becomes obvious.

In 95 cases glands were extirpated. Of these, in 42 cases the glands were proved carcinomatous.

Twenty-three of the patients who had carcinomatous glands also had infiltrated parametria. In the other 19 patients the parametria were free.

Of the women in whom carcinomatous glands were removed more than five years ago, 3 are still free of recurrence.

Bumm's statistics are clear. Of 218 women with carcinoma of the cervix, 133 were operable. Of these, 35 were cured permanently — 16 per cent.

HERMAN J. BOLDT.



# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

**Patek: Treatment of Abortion.** *Arch. f. Gynäk.*, 1912, xcvi, 8.  
By Surg., Gynec. & Obst.

Patek discusses the treatment of abortion upon a basis of 1012 cases observed at K. v. Krankenhaus Wieden in Vienna. The cases were divided into the following groups: Imminent abortion, 92; abortion in progress, 166; incomplete abortion, 723; induced abortion, 16; puerperal processes, 15.

Treatment in imminent abortion is strictly conservative. Interference for special cases only. His material does not permit Patek to form any conclusions as to the number of these pregnancies going to term.

Abortion in progress: the expulsion of the ovum is usually left to nature. Indications for interference are persistent or copious hæmorrhage and rise of temperature.

Incomplete abortion: Patek pleads for curettage (excepting special contraindications) irrespective of presence or absence of fever. In all evacuations the author prefers the blunt curette, using laminaria tents for dilation if necessary. He is not in favor of digital evacuation.

In imminent abortion, or abortion in progress at fourth to seventh month of pregnancy, he counsels waiting, or the use of pituitrin.

## RESULTS

*Incomplete abortion.* In 69 per cent of cases there is a fall of temperature after curettement; in 28 per cent the temperature remained from 4 to 6 days; complications attributable to curettage occurred in 5.2 per cent; 8 deaths occurred in cases admitted in the last stages; the total mortality was 1 per cent.

*Abortion in progress.* Seventy-seven per cent of the cases were admitted with fever and remained for after treatment; there were two deaths. One of these may be attributed to curettage during acute infection of the adnexa. There was no rise of temperature after curettage in patients admitted free of fever. Total results in febrile abortion, irrespective of classification (377 cases): treated by curettage, recovery, 86 per cent; complications with final recovery, 11.4 per cent; mortality, 2.6 per cent. Total number of deaths, 26; of these, 24 were admitted with well-advanced peritonitis. In 10 of these cases conservative treatment was carried out. In 2 cases of circumscribed peritonitis the pus was evacuated by vaginal incision; 3 cases of diffuse peritonitis were laparotomized; in 2 cases of incomplete abortion, with peritonitis, removal of putrid placenta was followed by laparotomy. In 3 cases

with peritonitis and retained placenta, cautious evacuation of placenta was followed by no success.

Patek advises evacuation if other indications are present in abortion in progress or incomplete, irrespective of bacteriological findings.

E. C. RIEBEL.

**Cragin: The Treatment of Ectopic Gestation.** *Surg., Gynec. & Obst.*, 1912, xiv, 276.  
By Surg., Gynec. & Obst.

The writer distinguishes two main classes in the treatment of ectopic gestation, viz.: (1) cases of early ectopic gestation (under 6 months); (2) cases of advanced ectopic gestation.

This point of division at six months is arbitrary. In the writer's judgment, the life of the child during the first six months is negligible, while thereafter the lives of both mother and child are to be considered.

Cases of early ectopic gestation are considered under three heads as follows:

(a) Prior to tubal rupture, or abortion. As soon as the diagnosis of unruptured ectopic gestation is positively made, removal of the pregnant tube is indicated.

(b) Treatment at the time of tubal rupture, or abortion. The main symptoms here are hæmorrhage and shock. The question to consider is whether to operate immediately and check the hæmorrhage, disregarding shock, or whether to defer operation until the patient has rallied from shock. The author advocates immediate operation unless it is evident that the shock is so profound that operation would undoubtedly kill; in which case he watches the pulse closely, and if there is any improvement, he defers operation; if the pulse grows steadily worse, he proceeds with the operation as soon as proper preparations can be made. Regarding technique he emphasizes strongly that the sources of hæmorrhage are two, viz.: the ovarian artery in the infundibulopelvic ligament and the uterine artery in the broad ligament near the uterine cornu; and that the operator should proceed immediately to these two points, compressing first with thumb and finger, and then clamps. He then removes the affected tube, but leaves the unaffected one.

(c) Treatment of early ectopic gestation subsequent to tubal rupture, or abortion. If suppuration is present, vaginal drainage should be done; if there is only the boggy hæmatocele, then remove the product of conception through the abdominal route.

The treatment of early ectopic gestation is con-



cluded by stating that in a very few selected cases of tubal abortion the author has advised non-interference without regret.

*Treatment of advanced ectopic gestation.* After six months it seems justifiable to give the life of the child consideration and allow the pregnancy to approach term, avoiding spurious labor by operating at eight and one half months.

*Technique of operation for advanced ectopic pregnancy.* The crux of the whole matter is management of the placenta, remembering that when rupture has occurred between the layers of the broad ligament, the placenta dissects up the peritoneum and may adhere strongly to the great vessels; and that when rupture is intraperitoneal, the placenta may adhere to the intestines and other viscera. Under ordinary circumstances the safest plan in either case is to remove the foetus from the sac and sew the latter to the abdominal wall, packing with gauze and allowing the placenta to come away gradually, the rule being to leave the placenta at the time of operation. However, when it is certain that the foetus is dead, the rule is to wait longer than eight and one half months, with the patient under close observation, before operating, and then remove the entire product of conception at once.

The article is concluded with the statement that whenever a diseased ovary is removed and the Fallopian tube upon the same side is healthy, the possibility of external migration of the ovum with ectopic gestation developing in that tube should be considered, and the tube removed unless it be the only healthy tube of a childless woman.

FLOYD RILEY.

**Siedeberg: The Significance of Albuminuria in Pregnancy.** *Brit. M. J.*, 1912, Oct., 1909.

By Surg., Gynec. & Obst.

The author found marked increase in the cases of post-partum hæmorrhage in 289 cases of albuminuria, collected during the last five years from St. Helen's Maternity Hospital, Dunedin, New Zealand. Of this number only 5 cases became eclamptic, though severe toxic symptoms showed in many. These albumin cases were not necessarily nephritic, though many of them were. They found, out of 1127 cases of pregnancy, 289 cases of albuminuria, or 25.6 per cent. By comparison it was found that all complications were more numerous in the albumin cases. In multipara showing albumin, histories of previous miscarriages and still-births were more common than in those without albumin.

Placenta prævia or low implantation was 8 per cent in the albumin cases, as against 1.3 per cent in the normal cases. In many of the albumin cases the placenta was degenerate in parts.

Thus it is evident that the albumin is only the visible sign of profound metabolic changes which are taking place in the body, and if the excretory organs fail to respond to the extra demand made upon

them, the waste products of cell metabolism, probably from the disintegration of protein, circulate in the blood, act as an irritant, and lead to the development of inflammatory changes in the renal tissue, causing degenerative disease and resulting in that type of nephritis of a transient nature which we usually separate from true inflammatory nephritis. If the condition is not recognized early, the waste products accumulate and will lead to more serious disease, ultimately resulting in the death of the mother from eclampsia. It is fortunate that we have this one sign — the presence of albumin — as an indication of the slow toxæmia which is going on, as in many cases there is absolutely no other symptom of the mischief which is brewing. . . . The fact that hæmorrhages are more frequent in cases of albuminuria is to be expected, since we know that renal inefficiency is associated with serious disturbances of the vascular system, manifested by an increase in the general blood pressure, by cerebral and retinal hæmorrhages and epistaxis, and finally leading to changes in every organ of the body, the uterus included.

The still-births and early deaths which so markedly preponderate in the albumin cases would be accounted for: (1) By the direct effect upon the foetus of the toxæmic blood, as is shown by the occasional occurrence of œdema in the child. Might not the various hæmorrhages in the newborn — for example, in the skin, from the mouth, the navel, the nose, and the gastro-intestinal tract — be also produced by the circulation of this toxin in the foetal blood? (2) Once degeneration of the placenta sets in, a certain amount of nourishment to the child is cut off and the child dies.

M. S. HENDERSON.

**Walcher: Emptying the Breasts in Treatment of Eclampsia.** *Zentralbl. f. Gynäk.*, 1912, XXXVI, Oct.

By Surg., Gynec. & Obst.

According to Walcher, the toxins causing eclampsia are found both in the mammary gland and in the uterus. The treatment, according to those who believe that the toxins are present in the breasts, is radical amputation of the breasts, or neutralizing of the toxins with injections of air or oxygen into the breasts. Many authors state that in eclampsia there is an overproduction of colostrum, which they think is an aid toward the removal of the toxins. If this were true, then removal of colostrum should show some improvement in the patient's condition. Walcher massaged the breasts of eclamptics until only serum exuded from the nipple. In a series of 11 cases, 7 cases were undoubtedly benefited.

J. E. LACKNER.

**Lichtenstein: Influence of Death of the Foetus on Eclampsia.** *Zentralbl. f. Gynäk.*, 1912, XXXVI, Oct.

By Surg., Gynec. & Obst.

Lichtenstein's article is a critique based upon Lamsbach's recent literary research relative to eclampsia and foetal death. Lamsbach found in



the literature 144 cases, which he arranged as follows:

1. 10 cases of cessation of eclampsia following foetal death.
2. 68 cases of onset of eclampsia following foetal death.
  - a. 50 cases where maceration existed.
  - b. 9 cases without maceration.
  - c. 9 cases of vesicular mole: (1) 4 cases of partial vesiculation; (2) 5 cases of complete vesiculation.
3. 66 cases of intercurrent eclampsia.
  - a. 33 cases where the child lived.
  - b. 29 cases with foetal death.
  - c. 4 cases without record as to the child.

From these findings the author argues against the theory that eclampsia is arrested by the death of the foetus. Indeed, the argument should rather stand that eclampsia following foetal death is rather of graver prognosis. Of the second group, 68 cases, 15 mothers were lost, or 22 per cent; of the 50 where the gestation products were macerated, 14 were lost, or 28 per cent. Lichtenstein further believes that in order to arrive at a fair conclusion regarding these cases the treatment must be taken into consideration. It is then shown that, in the great majority of such cases reported in the literature, morphin was used more or less freely, as a result of which foetal death and maternal improvement in eclampsia is not so apt to be cause and effect as that both are the result of the one factor, narcotic treatment. Evidence tending to prove that foetal death is of favorable influence in eclampsia should be as follows: 1. The time of foetal death and of the last convulsion must be stated exactly. 2. Medical treatment must be eliminated from the question. 3. Birth should not follow soon after foetal death. 4. The child should not long survive the last convulsion. 5. Convulsions and coma should not persist long after death of the foetus. 6. The mother should survive.

CAREY CULBERTSON.

**Peterson: Present Status of Abdominal Cæsarean Section: When and How Should the Operation be Performed?** *Phys. & Surg.*, 1912, xxxiv, 407.

By Surg., Gynec. & Obst.

In discussing the subject of abdominal Cæsarean section, the author considers five important questions:

First, in contracted pelvis is Cæsarean section or induction of labor most advantageous for mother and child? The induction of labor, when done properly, gives a very low maternal mortality, but the living foetus should always be a part of the obstetric problem, and with this procedure the infant mortality is high. The author calls attention to the fact that it is impossible to know exactly the size of the pelvis or the foetal head, or to estimate the propulsive strength of the uterine pains. Because of this, one would hesitate to advise either Cæsarean section or induction of labor in primiparæ showing a moderate contraction without first giving a test of labor.

Second, under what condition is craniotomy on the living child indicated in preference to Cæsarean section? When the mother is septic there is a high mortality attending Cæsarean section, while emptying the uterus from below gives the septic mother a greater chance for recovery. When the foetus is feeble and not likely to live under any condition, it is an ill-advised procedure to expose the mother to Cæsarean section. When a marked deformity of the child or a monster is diagnosed, craniotomy is preferable to Cæsarean section. In the hands of the unskilled either operation is dangerous to the mother, but because the peritoneal cavity is uninvaded craniotomy is less dangerous.

Third, in what cases of contracted pelvis is pubiotomy preferable to Cæsarean section? In marked contractions of the pelvis, pubiotomy does not compete with abdominal Cæsarean section; but when the conjugate vera measures from 7.5 to 9.5 centimeters, it does. After three or four hours of the second stage of labor without advancement, and easy traction with forceps fails to accomplish anything, pubiotomy is the better operation.

Fourth, under what septic condition is Cæsarean section indicated, and when under similar conditions is the operation unjustifiable? The writer shows that premature rupture of the membranes and repeated vaginal examinations lead to infection, and at times are a distinct contraindication to Cæsarean section.

Fifth, the type of operation to be selected in different cases. The Porro operation is favored in septic cases. The extraperitoneal operation is discussed, and the author's method of performing the classical Cæsarean section is given in detail.

## LABOR AND ITS COMPLICATIONS

**Humpstone: Pituitary Extract in Inertia Uteri.**

*Am. J. Obst.*, N. Y. 1912, lxvi, 357.

By Surg., Gynec. & Obst.

Humpstone finds that pituitrin fails occasionally for some unknown reason. In 64 cases he has seen no unhappy results. He uses 4 cc. of P. D. pituitrin as initial dose, and gives 3 doses at 20-minute intervals. In 20 cases where blood pressure was recorded, the highest rise in pressure was 20 points and the average was 8. He records a case where 4 cc. was given three times in three successive days in an attempt to produce an abortion, without result. In ten women at term or over estimated time he gave three doses of 4 cc. each on three successive days without inducing labor. Before effacement is fair and dilatation is at least three figures, he would advise against pituitrin. In postpartum atony he believes that pituitrin is valuable, but believes that ergot should be also given. In Cæsarean section he gives it after the placing of the sutures, and reports complete success in 6 or 7 cases where it was administered.

N. SPROAT HEANEY.



## MISCELLANEOUS

**Loscohlen and Closson: Pituitary Extract in Obstetrics and Gynecology.** *J. Mich. St. Soc.*, 1912, xi, 650.  
By Surg. Gynec. & Obst.

Loscohlen and Closson, writing from Parke Davis & Co.'s laboratory, state that from this limited clinical use of pituitrin they can confirm the observations of others that pituitrin is a very valuable agent in the treatment of uterine inertia, and that, administered in the first and second stages of labor, it greatly strengthens the uterine contractions, which in their cases were always rhythmical and never tetanic.

Using dogs, they took tracings of the uterine contractions and blood pressure to determine the effects of pituitrin, which they gave intravenously. In the normal dog they found that the uterine tone was increased simultaneously with a marked increase in blood pressure. The increase in blood pressure is of only very short duration. With lactating animals a more marked effect was noted: decided stimulation of uterine contraction and increase in uterine tone, these effects being less marked as the period of lactating advances. In animals which had just whelped, very marked contractions occurred within one minute of injection. The contractions, which were at first stormy, later became rhythmical and the rhythm and force continued during the period of observation (two hours). In an animal near term, a tracing shows an intense primary contraction appearing on injection. The relaxation from this primary contraction is delayed; later relaxation occurs and regular pains appear which persist during the period of observation.

They have given dogs doses equivalent, according to weight, to 100 cc. in the human, with no untoward effects except a slight temporary glycosuria. In one dog the equivalent of 250 cc. for the human produced considerable uneasiness, some urinary and faecal activity, and a mild glycosuria, which persisted for about three weeks. After the first one or two days the dog's condition was approximately normal and no permanent injurious effects were observed. They have given doses as high as 1 cc. per kilo to dogs near term without inducing labor.

Glycosuria does not become manifest after the use of pituitrin on animals for several days, and after enormous doses this may persist for two to three weeks. Relative large doses are requisite to the production of glycosuria, and they believe that it would never be produced by therapeutic doses. The administration of pituitrin produces a temporary decrease in the normal flow of the pancreatic juice, which is followed by a short increase and then a continued decrease in pancreatic activity. Pituitrin also inhibits the stimulant action of secretion on the activity of the pancreas. They cannot state this action on the pancreas has anything to do with the apparent effect of disturbed sugar metabolism.

N. SPROAT HEANEY.

**Bossi: Importance of Epinephrin Treatment of Osteomalacia.** *Zentralbl. f. Gynäk.*, 1912, xxxvi, Oct.  
By Surg., Gynec. & Obst.

In 1907-8 Bossi showed from experimental work on sheep and from clinical results that (a) in acute cases of osteomalacia and in acute exacerbations of chronic cases, suprarenal extract gave the best and quickest results; (b) the more acute the attack the higher the dosage of epinephrin; (c) this treatment should be given a trial before resorting to surgical methods; (d) a disturbed function of the suprarenal gland is a portion of the picture of osteomalacia.

Bossi cites a case of osteomalacia in a married woman, 40 years old, sterile on account of an acute antiflexion. For 13 years, dating from a time a few months after her marriage, she had been undergoing treatment for arthritis deformans, sciatica, tuberculosis of the hip, and rheumatism. Finally, when a diagnosis of osteomalacia was made, she was given 150 injections of epinephrin, 1 cc. of 1:1000 solution (the highest dose), during a period of 9 months, with a complete cure except for the deformity wrought during the 13 years of the disease.

J. E. LACKNER.

**Newell: Indications for the Major Obstetrical Operations.** *Boston M. & S. J.*, 1912, clxvii, 383.  
By Surg., Gynec. & Obst.

Newell discusses here the indications and contra-indications for the classical Cæsarean section and for pubiotomy, believing that primary Cæsarean section, i. e., operation before labor begins or in the early hours of a slight labor, is attended with practically no maternal or foetal mortality or morbidity. He thinks that "all patients in whom a serious doubt exists as to the probability of a spontaneous or easy operative labor are best treated by primary Cæsarean section, and that the test of labor, except in cases where the patient chooses to undergo this test with a full understanding of the dangers which it entails, should be obsolete. Believing that patients who are in poor physical or nervous condition and have not reacted well to the strains of ordinary life are seriously threatened with invalidism as a result of a prolonged labor or severe pain, and though there may be no question as to the outcome of labor in such a one, regarding the life of either mother or child, he would advise that such a patient be sectioned, on the basis that the patient is in no condition to stand the strain of labor when it can be avoided by a safe surgical procedure. He holds it conservative to confine by section elderly primiparæ who may never have another child, except when examination shows a distinctly small child and little or no rigidity of the soft parts; unless the mother declines he would also perform it in primiparæ who have been married a number of years without becoming pregnant and in women who have aborted repeatedly and at last have with difficulty been brought to term, since Cæsarean section offers the best chance for a living child. He advocates Cæsarean section for those who have had



a secondary operation for repair following previous deliveries, since delivery per vias naturales would probably again necessitate a secondary operation.

Newell believes that in placenta prævia close to term, with mother and child in good condition, a Cæsarean section is occasionally advisable, particularly if the cervix is long, rigid and not taken up, or if there is a marked pelvic contraction; if, however, the cervix is soft and easily dilatable, or if child is markedly premature, he would advise pelvic delivery, especially if patient has lost much blood.

He considers it unwise to section eclamptics except in presence of a pelvic indication or œdema of the vulva.

He considers it good practice in fibroids and Cæsarean section to have the uterus removed as a routine at a second operation.

He would do a pubiotomy only in those cases which have been in labor for some time, when a pelvic extraction of not less than  $7\frac{1}{2}$  cm. exists and the child is alive and vigorous.

Finally he concludes that in such a case pubiotomy is safer than a section and hysterectomy.

N. SPROAT HEANEY.

**Murlin and Bailey: Protein Metabolism in Late Pregnancy and the Puerperium.** *J. Am. M. Ass.*, 1912, lix, 1522. By Surg., Gynec. & Obst.

Murlin and Bailey studied the partition of the nitrogen of 100 urines, and believe that the ammonia and the amido-acid with the undetermined nitrogen fractions may be as high, or higher, in normal women in the last month of pregnancy than in women who have pre-eclamptic signs, or even eclampsia itself. Convulsions themselves do not necessarily produce acidosis. Following an eclamptic attack, high ammonia is often due to decomposition of urine within the bladder from contamination by the catheter. Their conclusions are as follows:

1. The nitrogen fractions of urine in the last month of pregnancy are but slightly different from those in the non-pregnant.

2. Normal women in the last month of pregnancy may have an ammonia-nitrogen as high as 17 per cent (after catharsis) and a combined amido-acid and undetermined nitrogen of 10 per cent.

3. Percentage figures are alone deceiving and of little value, for the total nitrogen is dependent on the amount of food absorbed, and this is affected by intake, nitrogen retention, catharsis, etc.

4. With all the clinical signs of pre-eclampsia, the nitrogen partition may be normal even up to and for twenty-four hours following the development of convulsions.

5. The nitrogen partition as an evidence of metabolic process cannot be said to offer an index to the pre-eclamptic or the eclamptic condition. Alterations in the structure of the liver, and finally in the metabolic functions of this organ may be, for

all that the urinary analysis shows, the result of toxæmia which ultimately leads to eclampsia, rather than the cause of the toxæmia. L. G. DWAN.

**Haussling: Blood Pressure in Pregnancy.** *J. M. Soc. N. J.*, 1912, ix, 242. By Surg., Gynec. & Obst.

The author analyzes 682 systolic blood pressure readings on 140 women apparently in good health. In this series the lowest systolic reading was 80 mm. of mercury; the highest, 150 mm. of mercury. The average was 113 mm. In about 84 per cent of the cases the blood pressure fluctuated between 100 and 135 mm. He has seen convulsions occur but once with blood pressure of less than 160 mm.

After discussing fully the shortcomings of our various methods of recognizing toxæmia of pregnancy before the onset of convulsions, the writer makes a plea for the routine use of the sphygmomanometer as a rapid, inexpensive, and accurate guide to its recognition. His conclusions are as follows:

1. In the great majority of normal pregnancies systolic blood pressure fluctuates between 100 and 135 mm. of mercury.

2. The high and low limits in normal cases are 150 and 80 mm., respectively.

3. A reading of over 150 mm. should be considered abnormal and, even in the absence of all other symptoms of toxæmia, should put the physician on his guard.

4. Eclampsia rarely occurs with blood pressure of less than 160 mm.

5. Blood pressure observation is an additional aid to, and not a substitute for, urinalysis in the recognition of the pre-eclamptic state.

**Cathala: Ablation of the Corpus Luteum at the Beginning of Pregnancy in Women** (L'ablation du corps jaune au début de la grossesse chez la femme). *La Gynec.*, 1912, xvi, Aug.

By Journal de Chirurgie.

Fränkel maintains that at the beginning of pregnancy the corpus luteum is necessary to the development of the egg. Experimentation on animals (the rabbit, the guinea pig, and the dog) has frequently shown that the destruction of the corpus luteum during the first twenty days of gestation was followed by an arrest of pregnancy.

Now, were the involution of the corpus luteum in woman not to begin until the end of four months, one might conclude that miscarriage was due to the destruction of the corpus luteum during the first four months.

The author reports a case of ovariectomy for a cyst with ablation of the corpus luteum at the beginning of pregnancy; delivery took place at term. From the literature he has gathered 11 analogous cases, with only 2 miscarriages; these latter, however, could be explained by a predisposition of the women, who had already had miscarriages several times. It seems, then, that in woman the integrity of the corpus luteum is of no importance for the development of pregnancy. L. CHEVRIER.



## GENITO-URINARY SURGERY

**Durand and Verrier: Paraneuritic Tumors** (Les tumeurs paranéurétiques). *Lyon Chir.*, 1912, viii, 389.  
By *Journal de Chirurgie*.

As the result of a personal case, the authors give a short study of these neoplasms, which are rare.

Their patient, a woman of 40 years of age, had for ten years suffered from painful abdominal crises, which frequently ended in vomiting. Within the last two months these crises had become more violent, the patient had become emaciated and had remarked that her abdomen had increased in size. An enormous tumor was found, which filled out the lower right half of the abdomen, extending from the false ribs to the iliac fossa, reaching beyond the median line and occupying a portion of the left hypochondrium. This tumor was irregular in shape and lobulated, hard in places, pseudofluctuant elsewhere, and gave a dull note on percussion. Hematemesis, which supervened at the beginning of the period of the patient's sojourn in the hospital, decided in favor of rapid intervention.

With the first maneuvers of the operation, the tumor burst. It enclosed masses of clots and neoplastic growths. Adhesions to the large perivertebral vessels rendered ablation completely out of the question, so that it was possible to remove only a portion of the tumor, together with the right kidney, which it had enclosed without invading it; the rest was marsupialized. An intestinal flexure which had been torn in the course of removing the tumor was attached to the abdominal wall and an artificial anus made in the latter. Death occurred the next day.

At the autopsy it was found that the tumor adhered to the vena cava and the aorta, enclosed an otherwise intact suprarenal gland and the right half of the colon, and compressed the stomach without invading it. Microscopic examination showed sarcoma.

Hundreds of these paraneuritic tumors are known and three fourths of them have been encountered in women. From an anatomical point of view they may be divided into four groups: (1) connective tissue tumors, fibromata, lipomata, and above all, sarcomata; (2) epithelial tumors of Wolffian origin, only two cases of which have become known; (3) mixed tumors (a half score of cases); and (4) cystic tumors (30 cases, according to Chamoff). The bulk of these tumors is always considerable and frequently enormous (up to 24 and 36 kg.).

Clinically, they manifest themselves by the obvious mechanical phenomena which result from their volume. Other signs are compression of the perivertebral vessels (oedema, ascite, and varicocele), of the intercostal and lumbar nerves (painful irradiations), of the intestines (constipation, chronic

obstruction), and of the stomach (signs of pyloric stenosis). On the other hand, neither disturbance of renal secretion nor compression of the ureters have ever been observed. The exact diagnosis can, in general, be made only after the operation. The latter is always difficult and grave, and at times impossible on account of the volume and the adhesions of the tumor. Chamoff gives the following statistics: out of 56 cases operated, 16 deaths, 32 recoveries, and 6 recurrences. In most cases the kidney was removed together with the tumor, even though the latter had not invaded it.

CH. LENORMANT.

**Pousson: Surgical Treatment of Calculus of the Kidney** (Traitement chirurgical des calculs du rein). *J. d'Urol.*, 1912, ii, 475.

By *Journal de Chirurgie*.

In an earlier dissertation, which was analyzed in the *Journal de Chirurgie*, the author studied the surgical treatment of aseptic lithiasis of the kidney; septic lithiasis is the subject of the present study.

It must be borne in mind, in the first place, that the anatomico-clinical varieties of septic lithiasis are so complex and so difficult to recognize that in a great number of cases the surgeon hesitates to decide between incision of the kidney and its extirpation.

Pousson has intervened in 22 cases of infectious calculus, the results in these cases being as follows:

Two nephrectomies led to 1 death at operation, 2 delayed deaths, and 5 recoveries.

Nine nephrectomies led to 2 deaths at operation and 7 recoveries.

Four nephrotomies, followed by secondary nephrectomies, led to 4 recoveries.

One nephrectomy, followed by nephrotomy of the remaining kidney, resulted in death.

From the immediate point of view, nephrotomy is proven superior to nephrectomy (12.5 per cent of mortality in the former as against 22 per cent in the latter); from the point of late and therapeutic results, it is shown to be inferior to nephrectomy.

We must distinguish three clinical types of suppurating lesions which result from the presence of one or more stones in the infected kidney: (1) calculus pyelitis, (2) calculus pyelonephritis, (3) calculus abscesses of the kidney.

The first type occurs alone, with exclusion of all forms of suppurating lesions of the parenchyma of the kidney, the last two frequently appear in association. In 22 cases, Pousson had 5 pyelitis, 1 pyelonephritis, 1 abscess of the kidney, and 2 cases of abscess of the kidney and pyelonephritis combined.

For calculus pyelitis either nephrotomy or



pyelotomy is proper, the choice of operation depending upon the presence or absence of more or less intense adhering perinephritis, which does not permit removal of the kidney from the cavity, a condition which is unfavorable to pyelotomy. Evenness of the walls of the suppurating foci favors complete evacuation of the pus and concretions.

If the infectious phenomena continue to develop after nephrotomy, secondary nephrectomy will serve to check them.

In calculous pyelonephritis, the presence of diverticular prolongations, which are more or less embedded in depressed sinuses in the renal tissues, renders drainage and disinfection hazardous. Consequently pyelonephritis, with multiple persistent foci and ramified or numerous calculi which are difficult to extract, involves nephrectomy if the affection is unilateral and the opposite kidney is healthy.

In the third type of suppurating renal nephritis, that is collections of pus scattered throughout the parenchyma, which is a rarer form than the two types previously mentioned, incision and direct curettement of the pockets may suffice if the latter are not very numerous and superficial; nephrotomy itself becomes insufficient if it is found that foci are scattered in great numbers throughout all parts of the parenchyma, and primary nephrectomy is ordinarily indicated.

J. TANTON.

**Kouznetsky: The Surgical Treatment of Renal and Ureteral Calculi with a Report of 82 Cases.** *J. Urol.*, 1912, viii, 522.

By Surg., Gynec. & Obst.

The author advocates pyelolithotomy as the most satisfactory operation for renal calculi. He leaves the fatty capsule attached to the anterior wall of the pelvis of the kidney and operates through the exposed posterior surface. Secondary hæmorrhage and serous formation are not as common after this operation as after nephrotomy. In cases where the stone cannot be removed through the incision in the pelvis, a nephrotomy of limited extent may be used as part of a combined operation. He believes that this combination is better than a primary nephrotomy, as the injury to the kidney parenchyma is less and secondary hæmorrhage is less frequent. In such an operation he found that the wound in the pelvis healed before the wound in the parenchyma.

VERNON C. DAVID.

**Rövsing: Tuberculosis of the Kidney.** *Ann. Surg.*, Phila., 1912, lxi, 521.

By Surg., Gynec. & Obst.

Tuberculosis of the kidney may occur without albuminuria, but the presence of albuminuria, pyuria, or cystitis should always lead to a careful microscopic and bacteriological examination of the urine. As to the diagnosis of the kidney involved in tuberculosis, the author speaks strongly in favor of ureteral catheterization and the careful examination of the urine taken from each kidney. A toxic albuminuria may be present on the well side, as albu-

min without cellular elements or organisms would suggest.

When the bladder is so diseased that ureteral catheterization is impossible, a bilateral lumbar incision, with exposure of each kidney for examination, is advisable to determine the localization and extent of the process. As for functional tests of the kidneys' efficiency, he relies only on the urea output from each kidney. He takes a more cheerful view of the prognosis of kidney tuberculosis than formerly, and urges early operative removal of the diseased kidney if it is unilateral. Ascending urogenital tuberculosis offers a more serious prognosis, due to the fact that kidney involvement is more likely to be bilateral and that the diseased prostate and bladder lead more often to urinary extravasation. After removal of the diseased kidney, he sutures the ureter into the wound to prevent formation of retroperitoneal tuberculosis.

In tuberculosis of the bladder, if the source of infection has been removed, he used 6 per cent carbolic acid solution as an irrigation, with good results. In all he reports 145 nephrectomies for renal tuberculosis, with 7 deaths.

VERNON C. DAVID.

**Waldschmidt: Tuberculosis of the Kidney.** *Berl. klin. Wchnschr.*, 1912, xlix, Sept.

By Surg., Gynec. & Obst.

The records of 40,621 post-mortems held in the hospital were examined for occurrence of chronic local kidney tuberculosis; 119 cases were found — males 68 per cent; females 32 per cent. Age: 1 to 10 years, 2.5 per cent; 20 to 30, 8.4 per cent; 30 to 40, 27.7 per cent; 40 to 50, 26 per cent; 50 to 60, 7.6 per cent; 60 to 70, 5.8 per cent. The kidney tuberculosis was bilateral in 70.6 per cent, unilateral in 29.4 per cent. It occurred on the right side in 11.7 per cent, on the left side in 17.6 per cent. Tuberculosis of other organs was found in 118 cases. Involvement of other organs was as follows: Lungs, 89 per cent; male sexual organs, 20.1 per cent; female sexual organs, 0.8 per cent; osseous system, 10 per cent; intestinal tract, 31 per cent; lymph glands, 22 per cent; skin (lupus), 0.8 per cent. One hundred surgical cases, beginning with the year 1900, gave the following statistics: male 52 per cent, female 48 per cent. Age: 1 to 10 years, 1 per cent; 10 to 20, 12 per cent; 20 to 30, 41 per cent; 30 to 40, 33 per cent; 40 to 50, 19 per cent; 50 to 60, 4 per cent; 60 to 70, 0. Of the patients, 28 exhibited active tubercular lesions in other organs, namely: lungs, 22 per cent; lymph glands, 3 per cent; bone, 1 per cent; male sexual organs, 2 per cent; skin (lupus), 2 per cent. Healed tuberculosis was found in 16 patients.

Involvement of the bladder as shown by cystoscopic examination: Group 1, findings not certain, 14; Group 2, involvement of bladder and ureter on the affected side, 43; Group 3, general bladder involvement, 35. In 9 deaths occurring in the surgical cases, autopsies were held. Where one-



sided kidney involvement was diagnosed intra vitam, diagnosis was confirmed at autopsy. Waldschmidt concludes that a correct diagnosis of the affected side is possible with quite a degree of certainty by employment of chemicophysical and functional methods of examination. The autopsies did not show ascending infections. A tubercular focal infection of the kidney from a primary focus is rare, but the sound kidney is in great danger when this has taken place.

**Spontaneous cure.** Waldschmidt reports one case from his own practice, and cites a case recorded by Ekehor in *Folia Urologica*. Four cases in the post-mortem material showed occlusion of the ureter, which is commonly the cause of total destruction of the kidney and the so-called cure. The kidney was totally destroyed in all these cases. Only in one of these was there a probable final cessation of the tubercular process, but the other kidney was affected. Hence, spontaneous cure is of rare occurrence. By the time obliteration of the ureter brings about this state, the other kidney is usually involved. In his own case he cannot say positively that the process is extinct, and even if so, the result is no better than that of a nephrectomy. If this had been done early, the patient would have been spared long years of suffering and danger.

Tuberculin treatment is considered uncertain, as even untreated cases may have long periods of absolute freedom from any symptoms. Kümmel reported 4 cases of extirpation after more or less extended tuberculin treatment. None of the kidneys showed signs of healing. In one case, which was cystoscoped frequently during the administration of the tuberculin, the associated bladder tuberculosis made perceptible progress. E. C. RIEBEL.

**Braasch: The Results of the Early Diagnosis of Urinary Tuberculosis.** *Interstate M. J.*, 1912, xxv, 863. By Surg., Gynec. & Obst.

Braasch's study is based upon the material examined at the Mayo clinic, and includes 212 cases operated upon for renal tuberculosis. One of the most important facts developed by an analysis of this material is that so many of the patients were sufferers from renal tuberculosis for from one to five years before receiving surgical attention. The reasons for this delay may be grouped under three heads: (1) The true nature of the disease still too frequently remains unrecognized by the general practitioner; (2) it is not generally known that surgery is the best means to cure tuberculosis of the urogenital tract; (3) there exists a widespread belief that renal tuberculosis can frequently be cured by means other than surgery, particularly through the use of tuberculin.

Braasch urges that every case of diurnal bladder irritability with more or less pyuria, persisting over several months, should be considered as renal tuberculosis, until proved otherwise. He then clearly outlines the method by which differentiation is made between tuberculous and non-tuberculous

bladder irritability. If a careful examination of the urine shows no pus, tuberculosis can be excluded in most cases. If pus is present in considerable quantity, the diagnosis of tuberculosis is probable, and depends upon demonstrating the existence of the tubercle bacillus in the urine. If looked for repeatedly, this bacillus can be found in the urine in practically every case of early renal tuberculosis. If, however, it cannot be found, we still have an infallible test in the inoculation of a guinea pig with the sediment of a catheterized specimen of urine. If, owing to circumstances, the guinea pig test is not available, and the urine examination doubtful, we may still secure corroborative testimony by physical and cystoscopic examination. For example, a nodular epididymis or prostate, unaccompanied by a history of venereal disease or nocturnal frequency, points almost certainly to renal tuberculosis. Likewise, thickened ureters, renal tumor, temperature elevation, loss of weight, radiographic data, etc., are valuable points elicited by physical examination. The cystoscopic picture of bladder tuberculosis, while not pathognomonic, can usually be recognized by the experienced observer.

Granted that a diagnosis of urinary tuberculosis has been established, the next important point is to localize the lesion. This process of localization is solely one of cystoscopic technique and depends upon determining: (1) the character of bladder infection; (2) primary or secondary foci in the prostate or epididymis; (3) which kidney is involved, and the degree of involvement; (4) functional capacity of remaining kidney.

With the diagnosis established and the localization definitely determined, the question of treatment presents itself as the important final point. Under this head Braasch makes the definite statement that, while incipient renal tuberculosis may occasionally recover under treatment by non-surgical methods, such instances are so exceptional that they cannot be relied upon. He quotes the records of 71 unoperated cases to substantiate the statement. In many cases of so-called spontaneous cure, the ureter is obliterated and the kidney exists as a caseous, semisolid, menacing source of infection.

On the other hand, it is generally recognized that surgical treatment effects a cure in the majority of cases. At the Mayo clinic, the immediate operative mortality in 203 cases was 2.9 per cent; 82 per cent were alive one year after operation, 69 per cent being well or greatly improved, and 13 per cent showing little or no improvement in bladder symptoms. Of this latter group of cases, 83 per cent had had their infection more than two years before operation.

As contraindications to operative procedure there are: (1) advanced pulmonary infection; (2) multiple lesions of bones, joints, or prostatic abscess with perineal fistula; (3) peritonitis; (4) marked bilateral involvement; (5) clinical evidence of renal insufficiency. M. G. SEELIG.



**Bernard and Heitz-Boyer: Results of the Different Methods of Treatment for Renal Tuberculosis** (Résultats comparés de différents traitements de la tuberculose rénale). 26th Ass. fran. d'Urol., Oct., 1912. By Journal de Chirurgie.

Bernard and Heitz-Boyer distinguish several forms of renal tuberculosis and, eliminating follicular, epithelial, and interstitial nephritis, devote their report exclusively to chronic infiltrating, ulcerative, caseous tuberculosis of the kidney. It was thought that this question was closed, as the immense majority of clinicians had been convinced by the works of Albarran and others that nephrectomy was the treatment of election. Nephrotomy gives bad results, partial nephrectomy is followed by recurrence and is abandoned by all surgeons. Simple medical treatment, hygienic and medicinal, was looked upon as inefficient. It has not been demonstrated that heliotherapy and radiotherapy have curative value. But to-day some clinicians wish to substitute for nephrectomy certain antitubercular agents said to be specific. It behooves us then to compare and criticise the results obtained by nephrectomy and by the so-called specific agents.

Nephrectomy is based upon a certain number of anatomical, clinical, and experimental facts. Renal tuberculosis is met either in individuals having other tubercular foci, usually small and inactive, or in subjects apparently free from other tubercular taints. It is always primary as regards other segments of the urinary apparatus. It is of descending, hæmatogenous origin. These reasons suggest the removal of the renal focus, feasible owing to the unilaterality of the lesion.

Renal tuberculosis is unilateral at the onset and remains so during a long period of its evolution. Tuberculosis in the other kidney is more likely to occur if the kidney primarily involved is not removed. For instance, in 1,022 cases, Israel noted after nephrectomy secondary tuberculosis of the other in only 1.6 per cent of the cases. In non-operated patients there was secondary tuberculosis in 29 per cent of the cases. The transference of the bacilli from one kidney to the other is more frequent than the transference of bacilli from an extrarenal focus. When the condition has become bilateral it is less accessible to surgical action. Renal tuberculosis is of slow evolution. In a large number of patients the duration of the disease from the time it is recognized first clinically, is from three to four years; very often, it is of longer duration. This slow evolution is characterized by periods of intermission, which may be very prolonged and which should not be mistaken for cures. In fact, the disease is incurable spontaneously.

As to the four anatomical processes advanced as evidence of renal tuberculosis, one (cretaceous tuberculosis) has not been demonstrated, the others (sclerosis, serocystic or caseocystic degeneration) are rare and do not result in real cures, as the lesions do not lose their virulent activity and remain a menace to the system, and especially to the other

kidney, where they determine very often absolutely latent nephropathies. Clinical facts also do not seem to warrant belief in the spontaneous cure of renal tuberculosis. Furthermore, renal tuberculosis has a tendency to tubercularize the ureter and the bladder, the organs of generation, the second kidney; in fact, the entire organism.

All these considerations invite surgical treatment. Each kidney must be studied separately as to its anatomical state and as to its functional value. As to the physiological gravity of the removal of one kidney, all clinical and experimental data show that it is nil.

Operative mortality is from 1 to 6 per cent. The efficacy of intervention is as remarkable as it is benign. The remote mortality is but 15 per cent. It is thus seen that nephrectomy saves from death four fifths of the patients having renal tuberculosis. Fifty per cent of the surviving patients remain completely cured. The time of the operation has a great influence upon the general state of the organism. Early operations give the most favorable results. So-called specific medication, in the opinion of the authors, has not proved of value. Analysis of the cases under observations shows no real cures, that is, cures controlled by ureteral catheterization and inoculation of urine. The authors are of the opinion that, barring cases in which nephrectomy is impossible, the treatment for renal tuberculosis is the removal of the diseased kidney as soon as the diagnosis is made.

Cathelin is also of the opinion that treatment with tuberculin has not proved valuable and can show no certain scientific or experimental cures. Improvement such as can be obtained by well conducted medical treatment attends its use. Surgical treatment has proved its efficacy. He reports 75 early nephrectomies with only 2 deaths.

Legueu believes there are two points to consider: one is indisputable, the necessity of early nephrectomy; the other is disputable and debated, that is, the value of conservative treatment compared to nephrectomy. He has had 120 patients from all walks of life, and he shares the opinion of those who condemn conservative treatment. Conservative treatment is not supported by anatomical facts. He has seen the evolution of recent lesions during the administration of tuberculin; it is in vain that one looks for cicatricial lesions. He thinks that in some cases treatment by tuberculin is even dangerous, because he has seen febrile reactions, disseminations not noticed before the use of tuberculin. This is why he advocates nephrectomy in unilateral renal tuberculosis.

LeFur reports 22 cases of nephrectomy for renal tuberculosis. There were no operative and no post-operative deaths. One patient in complete anuria died, but all the other nephrectomized patients operated upon from six months to twelve years previous to this report are still alive, and most of them are cured. LeFur also presented 81 cases of renal tuberculosis treated medically, with 4 deaths.



In these the proportion of cures was from 30 to 40 per cent. Naturally, the term "cure" is elastic in these cases.

The treatment of renal tuberculosis must be either medical or surgical. The indications for intervention are furnished by the persistence of local troubles (cystitis, renal pain), by the aggravation of the general state, or by marked diminution of renal function. At the onset of the disease, especially when there is only a small quantity of albumin and few casts, with or without pyuria and frequent micturition, medical treatment should be tried. After nephrectomy medical treatment should always be used. We must not forget that renal tuberculosis is not a primary tuberculosis. All individuals having a tubercular kidney, even after removal of the diseased organ, should be considered as subjects of latent tuberculosis, and be kept under supervision and medical treatment.

Hogge as yet is not an advocate of tuberculin therapy. He has tried it in four cases, for periods ranging from three and six months to one year. He has had only bad results. One of these cases was nephrectomized after four months of treatment, and the other after nine months. Neither kidney showed any evidence of healing. He insists upon the usefulness of nephrectomy in bilateral renal tuberculosis when there is a marked difference in the functional value of the two kidneys. In renal tuberculosis, he was able to convince himself by repeated ureteral catheterization, that when one kidney is markedly invaded with tuberculosis, the other kidney is usually also affected (albuminuria, pyuria, tubercular bacilluria).

Rafin has performed 165 nephrectomies for renal tuberculosis. As to his results, he has looked up his cases and finds that 49 of his patients have died, 63 are incompletely cured, and 53 are completely cured. Those patients are considered as incompletely cured whose urine contains bacilli, and as the bacilli in a certain number of cases cause vesical and ureteric lesions, it can easily be seen that the number of completely cured will increase as these ureterovesical lesions heal.

Pousson has treated with tuberculin only a few cases of renal tuberculosis, and those in the presence of unfavorable conditions; that is, only such subjects as had so advanced lesions that surgical intervention was contraindicated. Since 1900 Pousson has performed nephrectomy in all cases of nephrotuberculosis, the only contraindication being lesions of the other kidney or a bad general condition of the patient. Exceptionally he performs nephrotomy. Like other surgeons, he considers this an operation of necessity, giving in itself no therapeutic results but being of value when serious accidents exist, as it places the patient in a state to withstand ultimate nephrectomy. In 70 of his patients who survived the operation, he lost 9 in the year following the operation and 2 in the other years. Fifty-nine of his patients are still alive. In some the operation was performed 12, 13 and 15 years ago. After

nephrectomy, vesical symptoms are at times very annoying. They sooner or later subside. One of the curative effects is found in the regular course of pregnancy in nephrectomized patients and the tolerance which these patients show to accidental and operative traumatism.

Chevassu calls attention to the possible invasion of the suprarenals in the course of renal tuberculosis. He sees in it another argument in favor of early extirpation of tubercular kidney. He insists upon the advantages of the lateral subperitoneal route for extirpation of the tuberculous kidney. Owing to the total closure of the operative wound and to the independent lumbar drainage, the nephrectomy wounds for tuberculosis heal easily without fistula formation.

Bringersma is more than ever convinced that early nephrectomy is the method of choice in unilateral renal tuberculosis. He has treated 22 cases of renal tuberculosis by Koch's tuberculin and has obtained no results. He has removed 3 kidneys from patients who had been elsewhere treated with tuberculin. Examination of these kidneys did not show the slightest evidence of the curative action of the medicine. On the contrary, in 3 of the cases he found, adjacent to old lesions, lesions that were undoubtedly recent.

Marion says that cases of cure by medical treatment are few and do not admit of much scrutiny. Medical treatment cannot be adopted until it has been demonstrated that it cures rapidly and frequently without exposing the patient to diffusion or aggravation. He reports 3 patients in whom this specific treatment was not followed by any improvement of the vesical lesions, attenuation of the painful symptoms or any clearing up of the urine, or by any general improvement.

Keersmaecker began treating renal tuberculosis with tuberculin in 1905. He has treated 650 cases of tuberculosis of the urinary channels. He reports in detail 12 most unfavorable cases in which were noted the complete syndrome — pyuria, strangury, pollakiuria, emaciation, etc. Despite the unfavorable nature of these cases, the patients, still under observation, present no symptom or only negligible symptoms. As proof of his assertions, Keersmaecker presents radiographs and specimens of urine. He says that with well applied treatment he has obtained in hundreds of his patients satisfactory results. If cure is not obtained, it is either because the physician did not apply the treatment well, or because the patient did not come for treatment until the other kidney was irretrievably compromised.

Paul Delbet had 4 nephrectomies for unilateral renal tuberculosis and 4 recoveries. The cases were operated upon 4, 6, 10 and 11 years ago. A nephrectomy in a case of bilateral renal tuberculosis prolonged life for two years. A patient upon whom Delbet did a partial nephrectomy 7 years ago is still alive. During the same period, three patients whom he treated medically died. One case treated with immunizing bodies resulted in death. Delbet



has obtained two marked improvements; one by Calmette's tuberculin, the other by sulpho-alliaceous essences. These patients did not present operable lesions.

Pasteau does not know of any case of renal tuberculosis cured by medical treatment. No anatomical proofs have been advanced, and the clinical reports are few and very incomplete. Renal tuberculosis is an extremely frequent affection. It is progressive. Nephrectomy can cure it. Operative mortality is from 1 to 6 per cent. The large number of complete cures, 50 per cent, should decide the surgeon, as without nephrectomy the patient will not recover. Medical treatment in those cases where nephrectomy is possible is positively dangerous, because it suppresses or retards an operation necessary to secure cure.

Carlier has performed 133 nephrectomies, with an operative mortality of 6 per cent. In his last 50 operations, his operative mortality has been  $3\frac{1}{2}$  per cent. He advocates nephrectomy for renal tuberculosis, insisting upon an early operation so as to save his patients the contamination of the inferior urinary channels and, in men, of the generative organs. With such favorable results he does not believe himself justified in preferring surgical treatment to so-called specific medical treatment, the value of which is yet to be demonstrated. He has treated 8 patients, previously nephrectomized, with Spengler's immunizing bodies. These patients presented either lesions of the other kidney or of the bladder or the generative organs. The results which he has obtained have not satisfied him as to the value of specific medication, but he has noticed no inconvenience attending its use.

Oraison says that it is dangerous to expect good results from medical treatment. This form of treatment is only of value at onset of the affection when the kidney is still in fairly good state. Our methods of examination do not enable us to know whether the disease is beginning, nor do they inform us of the extent of kidney destruction. Twenty-five nephrectomies have given him 4 deaths, 5 improvements and 16 cures.

Lavenant does not wish to attack surgical treatment, but he says there is a large place for medical and serum treatment which places the patients in better condition, whether they are operated upon or not. Patients subjected to the immunizing bodies of Spengler have been much improved; in one there was an improvement in the patient's general condition, and disappearance of pus and of bacilli in the urine (demonstrated by bacteriological examination and inoculation of guinea pigs). He reports several cases benefited by the immunizing bodies of Spengler.

Castaigne has records of 112 cases of renal tuberculosis treated medically. Of these, 70 were patients with bilateral renal tuberculosis or general tuberculosis. These cases could not be operated upon. Twenty-two other patients had already been nephrectomized, and 10 of these presented a unilateral

tuberculosis. In 102 patients, 8 appear cured, 22 show gradual improvement, in 30 there was only slight improvement, and in 42 no manifest improvement. If one considers that 102 of these patients were inoperable, and that a most grave prognosis had been made in every case, the statistics are really eloquent in favor of medical treatment. The author believes that the conclusions of the reporters are too pessimistic as to the value of medical treatment, and suggests the appointment from the profession of men holding different opinions on the subject so that they will investigate the subject and decide as to what can be expected of surgical and of medical treatment in renal tuberculosis.

Hartmann has performed 89 operations for renal tuberculosis, 24 nephrotomies, 65 nephrectomies. In the 24 nephrotomies, 5 have been improved, 12 have been secondarily nephrectomized, 7 died from 14 days to 3 months after operation owing to continuous evolution of the lesions. The nephrotomies were followed by nephrectomies as soon as the integrity of the other kidney was established. Sixty-five nephrectomies have given no operative deaths. In almost all of the cases cystitis disappeared spontaneously. Although the ureter was not removed, an abscess developed in only one case. This was due probably to sclerosing of the duct. It is needless to remove the ureter, but to avoid inoculation of the wound it is important to extirpate the renal tuberculous pocket without bursting it. He advocates nephrectomy in renal tuberculosis.

J. DUMONT.

**Hunner: The Treatment of Pyelitis.** *Surg., Gynec. & Obst.*, 1912, xv, 444. By Surg., Gynec. & Obst.

The author presents a comprehensive classification of the causes of pyelitis, dividing them into three main groups and subdividing each of these. Class 1 includes the inflammations of the kidney pelvis not associated with infection; Class 2, the infections of the kidney pelvis due to an underlying urinary tract disorder; and Class 3, the infections of the kidney pelvis in which this is the chief or sole lesion of the urinary tract. Attention is called to the activity of the kidneys in both health and disease in excreting bacteria from the system.

Pyelitis probably always requires for its inception some other factor than microbial invasion. The more common of these contributing factors are urinary stasis from any cause, fever, toxæmia, and trauma.

In the last analysis, there are comparatively few cases of pyelitis which we may regard as pure catarrhal inflammations of the kidney pelvis due to an infection, and unassociated with some mechanical, traumatic, toxic, or chemical predisposing factor. It is therefore illogical to undertake the treatment of a pyelitis case without an investigation of its cause.

In reporting 26 cases of pyelitis, the author excludes his cases associated with tuberculosis and pyogenic infections of the kidney substance, as



well as those cases associated with stone in the kidney or ureter. He includes those cases associated with appendicitis and those associated with stricture of the ureter, because they belong to a comparatively new field of research.

He reports cases associated with the following conditions: congenital malformation of the kidney pelvis, interstitial nephritis, exposure to cold with infection, following a gonorrhœal infection, following typhoid fever with typhoid bacteriuria, and post-operative pyelitis. Certain cases are classified as follows: an intestinal group, apparently due to gastro-intestinal disturbances; a cystitis group, in which the pyelitis is associated with cystitis; an appendicitis group; a tonsilitis group, associated with stricture of the ureter; a pyelitis of pregnancy group, and a puerperal group.

It appears from the report of cases that pyelitis is often overlooked or diagnosed as some other disease, particularly as cystitis (the puerperal cases), malaria, and typhoid fever. On the other hand, a more fatal error might occur in too implicit dependence on the urine examination in the cases of pyelitis associated with acute appendicitis.

Occasionally one sees a patient with monolateral or bilateral pyelitis, who seems but little or not at all inconvenienced by the condition; but this is rare, and the rule is that the patient suffers with ill health and discomfort quite out of proportion to what might be predicted from an examination of the urine.

**Treatment.** The object of treatment is to rid the patient of pain or discomfort and to restore the kidney to the secretion of urine free from pus and bacteria. Many cases of pyelitis clear up under medicinal and hygienic measures. If these fail, resort should be had to the semi-surgical measure of pelvic lavage.

The author has had universal success in the colon bacillus infections by the use of silver nitrate solutions. These were first used in a strength of 1:3000, and followed by a flushing with salt solution or boracic acid solution. Later, solutions of 1:1000 strength were used, and the author suggests that the flushing with a bland solution may be unnecessary.

Pilcher's lavage with argyrol 25 per cent is mentioned, also Koll's treatment with lavage of 2 per cent aluminum acetate.

#### **Vogel: Operation for the Wandering Kidney.**

*Zentralbl. f. Chir.*, 1912, xxxix, No. 41.

By Surg., Gynec. & Obst.

Vogel has devised a new method of fixation of the kidney. He draws his conclusions from the work of Stiller and of Bier, that floating kidney is not a local affection but rather a part of a so-called constitutional asthenia. This condition includes a number of surgical diseases, based pre-eminently upon weakness and non-resistance of connective tissue. He has observed the healing of wounds and scar formation in this class of patients and finds these processes

below par. As a consequence the formation of connective tissue should not be relied upon as a means of kidney fixation. Vogel forms a flap from the capsula propria of the kidney. This is carried around the twelfth rib through a slit and reunited with the remainder of the capsule. The twelfth rib is resected at a distance from the transverse process, to permit a certain amount of play and render the organ less superficial. The band is prepared in such a manner that the upper half of the kidney is covered by the twelfth rib. The sub-renal space is obliterated by skinning of the peritoneum. Tamponade is not employed, as it leads to the formation of extensive scar tissue, which subsequently draws the kidney downward instead of supporting it.

E. C. RIEBEL.

#### **Chevassu: Estimating the Ureic Importance of the Kidney by Means of a Study of Azotæmia and the Constant of Ambard** (*L'appréciation de la valeur uréique du rein par l'étude de l'azotémie et de la constance d'Ambard*). 26th Cong. l'Ass. fran. d'Urol., Paris, Oct. 9, 1912.

By Journal de Chirurgie.

Chevassu reports the result of 482 renal explorations which he has made at the Hospital Necker and the results of an investigation of the "azotæmia of Vidal" and "the constant of Ambard" (see *Proceedings*, 1911, pp. 518 ff.).

He shows with what precision this method permits the estimation of the ureic function of the kidney, a function which is so essential that any change in it may lead to uræmia, and which no other method has so far permitted us to estimate with exactness.

Thanks to this method, he has been able to satisfy himself that all surgical affections of the kidney may be accompanied with a profound change of the ureic function; it is therefore extremely useful to know, before undertaking an operation, whether this function is good, medium, or poor, for nephrectomy becomes dangerous in the last instance.

By the study of azotæmia and the constant, one can rather frequently make a diagnosis of unilateral or bilateral involvement independently of any exploration of the kidney; one may even, thanks to his method, be confident and secure in performing certain nephrectomies when the kidney is altogether inexplorable. In affections of the prostate, azotæmia and the constant, by revealing the state of the kidneys, permit one to estimate the possible dangers of prostatectomy.

F. Legueu adds to Chevassu's cases the support of his own experience. He finds the constant an extremely valuable method. It is superior to anything else that we know of at present for estimating the functioning of the kidney and for knowing the resistance of a patient just prior to operation. With respect to patients upon whom nephrectomy is about to be performed, it is perhaps a little exaggerated, in the present state of our knowledge, to base the practice of nephrectomy exclusively upon the evidence of the constant. The concentra-



tion permits us to operate, confident of security; but it too may deceive us and lead us to refuse operation to patients who are capable of undergoing it.

J. DUMONT.

**Rochet: Experimental Attempts at Partial Grafting of a Kidney Upon Another Kidney** (Essais expérimentaux de greffe partielle de rein sur rein). 26th Cong. l'Ass. fran. d'Urol., Paris, Oct. 9, 1912. By Journal de Chirurgie.

Rochet has made a whole series of experiments on grafting one kidney upon another kidney (or rather on grafting fragments of a kidney upon the kidney of another animal of the species).

The grafted fragment had either the shape of a wedge, which was placed between the lips of an incision in the kidney, or the shape of a skull-cap, which replaced an external fragment of the same form previously removed from the kidney. The animals used in these experiments were rabbits. Of course, the most rigorous aseptic precautions were taken. The rabbits which had received the graft were killed in from four to five months.

Rochet reports the anatomical findings as follows: The grafted materials adhered closely, but, as grafts, were not successful; the volume of the graft, which was rather well conserved for several weeks, gradually decreased until finally absorption was complete. In addition, the opposite kidney was clearly injured by the traumatism to the grafted kidney, as well as by the process of resorption which followed the grafting. In every case Rochet found the unoperated kidney to be affected with a slight sclerotic nephritis.

J. DUMONT.

**Evans, Wynne and Whipple: Reflex Albuminuria, Renal Albuminuria Secondary to Irritation of the Urinary Bladder.** *Bull. Johns Hopkins Hosp.*, 1912, xxiii, 311. By Surg., Gynec. & Obst.

The causation of subacute cystitis by means of placing a foreign body in the lumen or the wall of the urinary bladder is followed by an albuminuria of varying degree. It might be thought that this albumin was derived in greater part from the irritated bladder mucosa, but careful study shows that in great part it is derived from the kidneys. This can be shown by collecting urine from the ureter or from the washed bladder during diuresis. This renal albuminuria may occur in perfectly normal kidneys, and may leave no trace of its occurrence in normal organs except for the presence of hyalin casts and the resulting slight dilatation of the uriniferous tubules. Catheterization without bladder irritation will cause no albuminuria.

Chemical irritation of the bladder mucosa may be associated with reflex albuminuria, and in this irritated state any mechanical injury, such as may be produced by catheterization or irrigation, is followed by a prompt and marked albuminuria. It seems pretty clear that this must be a true *nervous reflex*, in which stimuli applied to the bladder mucosa react upon the renal epithelium and modify its

secretory activity. It seems highly probable that a similar reflex albuminuria may be found in human cases, and it is obvious that, were this the case, it would have an injurious effect upon kidneys, especially if already more or less diseased and laboring under difficulties. The path of this nervous reflex has not been worked out; and it will be interesting to determine whether irritation of the pelvic viscera adjacent to the bladder may not bring about some such reflex, since the pelvic viscera are supplied in general from the same nerve plexuses.

**Corbett: Changes in the Kidney Resulting from Tying the Ureter.** *Am. J. M. Sciences*, 1912, cxliv, 568. By Surg., Gynec. & Obst.

Clinicians agree that atresia of the ureter usually produces hydronephrosis in the corresponding kidney, and that this condition may remain or be followed by secondary atrophy.

The picture is much the same whether the condition arise from congenital atresia or from sudden stenosis of the ureter, but the effect upon the patient other than the loss of the functioning kidney is not definitely established. Conclusions of laboratory workers have not always been identical, and the author in this paper has reviewed only the most important works along this line.

This paper discusses: (1) changes resulting from ligation of the ureter in the kidney on the *tied* side; (2) the amount of function remaining after atresia of the ureter lasting for various periods of time; (3) lesions remaining as a permanent legacy after tying the ureter and at a subsequent date removing the ligature; and (4) changes in the unoperated kidney.

Results of atresia of the ureter on the operated kidney closely resemble a nephritis. The kidney, after a 24-hour stenosis, is heavier than the other and presents alternating light and dark areas. The glomeruli are included in a zone of congestion, areas of degeneration of the convoluted tubules are present, and the tubules are filled with granular detritus, with dilatation of the tubules.

After six days' ligation the kidney is very pale and oedematous, is increased in size and weight, and shows marked hydronephrosis and much destruction of the tubules. After twenty-six days' ligation there is extreme hydronephrosis, it being in reality a thick walled cyst.

In order to determine the secreting power of kidneys whose ureters had been ligated for various periods of time, the urine was collected and submitted to analysis. After twenty-four hours' ligation it was found by the nitrogen content that the kidney was capable only of secreting urine in a very irregular manner, but in time was restored to its full function. After six days' ligation, allowing sufficient time for restoration of the circulation, it was found that the kidney was capable of excreting urine containing an amount of nitrogen compatible with nitrogenous equilibrium; while a kidney which had been ligated twenty-four days was at first able



to excrete almost nothing at all. Subsequently it partially regained its function, later almost entirely losing it. The urinalyses in general confirmed the histological findings. The examinations of the unoperated kidneys, in the author's opinion, showed nothing definite or conclusive.

In view of the fact that some authors claim the production of a nephrotoxic substance in ureteral occlusion, the author injected the contents of hydronephrotic kidneys into normal rabbits; and aside from an apparent decrease in the nitrogen output no effect was noticed.

The author concludes that in order to save anywhere near the full functional capacity of the kidney the ureteral obstruction must be removed not later than six days. Beyond twenty-six days the removal of the kidney seems justifiable, as there remains but little functioning parenchyma; and that hydronephrosis is always a potential danger, as it may become infected or cause a mechanical disturbance.

H. A. PORRS.

**Paul: Cystitis.** *Med. Herald*, 1912, xxxi, 512.

By Surg., Gynec. & Obst.

Etiologic predisposing factors are congestion or abrasion of the mucosa, exposure to wet and cold, retention due to large prostate or stricture, stone or foreign bodies, irritants as cantharides, turpentine or excess of alcohol or ammonia in the urine, trauma from rough instrumentation, falls or blows, new growths, tabes, myelitis, and the exanthemata.

Exciting organisms are: bacillus coli, tuberculosis, typhosis and anthracoides, streptococcus, staphylococcus, gonococcus and pneumococcus. Frequently a mixed infection is present. Infection may occur from kidney, urethra, dirty instrumentation, from neighboring focus through lymphatics, rarely through the blood, and from rectum, especially if ulceration is present. Either predisposing or exciting cause may be present separately without causing cystitis.

Pathology varies from catarrhal inflammation with epithelial desquamation and round celled infiltration and oedema of the bladder wall in acute cases, to chronic inflammatory thickening with ulceration, and in the presence of retention, great dilatation and trabeculation. If there is no retention the bladder becomes atrophic through contraction of connective tissue.

The onset is usually acute, becoming chronic, but may be insidious with acute exacerbations. Frequent micturition is due to abnormal irritability of sensory nerves in the trigone. Rubbing of inflamed surfaces from puckering caused by overexertion of the detensor muscle causes tenesmus. Three glass test shows last urine loaded with pus. Blood often present at end of micturition in tuberculous and gonorrhoeal form. If intimately mixed with urine points to tumor or ulcer. Fever and rigors occur only with absorption of inflammatory products. Cystoscopic examination reveals stricture stone, diverticular, enlarged middle lobe, polypi,

new growths and ulcer. Catheterization of the ureters shows kidney lesions. Centrifugized urine should be stained for tubercle bacillus and other organisms, with animal inoculation if tuberculosis is suspected.

Prognosis is good if the etiologic factors can be reached and removed. It is very bad in malignancy and tuberculosis.

**Treatment.** Remove the predisposing factors. Catheterize absolutely aseptically. In acute cases rest in bed, catharsis, frequent hot sitz baths, hot applications over bladder, guard against chill, milk diet, and forced liquids. Soda bicarbonate is given for acid urine, hexamethylenamin if alkaline. Morphine or codeine with belladonna by mouth or suppository for tenesmus and frequent micturition. In chronic cases give hexamethylenamin by mouth. Locally irrigations with mild antiseptics as boric acid, potassium permanganate, organic silver salts, or silver nitrate. As a last resort continuous catheterization, perineal drainage or suprapubic cystotomy with curettage are indicated.

FREDERICK H. FALLS.

**Chute: Some Observations in Cases of Prostatic Obstruction Preventing Overdistended Bladders.** *Boston M. & S. J.*, 1912, clxvii, 607.

By Surg., Gynec. & Obst.

The writer believes that the mortality in operations for the relief of gastric obstructions depends largely on an overdistended condition of the bladder, which, through dilation of the ureter, leads to renal back pressure and crippling of the renal function. Two types of this back renal pressure are to be distinguished: one in which the urine is aseptic, the other in which it is infected. In the aseptic type it is probable that there is an element of nephritis due to pressure; in the infected type there is a pyonephrosis. Besides the nephritis element, there is in both types an element of renal embarrassment or functional disability that depends on the back pressure alone and which can be relieved by removal of this pressure. This may be determined through success or failure of the operation. The danger in the aseptic type is greater than in the infected, since in the first the seriousness of the condition is often overlooked and any attempt to relieve the back pressure may be followed by infection of the kidney.

The ordinary means of estimating renal efficiency are not of great value in these cases, since they cannot on the one hand give any definite idea of the improvement that will take place from the relief of pressure, or on the other hand give an idea of the diminution of function that will follow infection. A more accurate idea of the patient's condition can be drawn from the symptoms of toxæmia that he shows—some referred to the digestive tract, as nausea, vomiting, and dry tongue; others, as twitching, referred to the nervous system. The attempt in these cases should be to relieve the renal back pressure without adding any injury to the kidneys, either from infection or



anæsthesia. This seems best accomplished in the aseptic cases by suprapubic cystotomy done under cocaine. In the infected cases, an inlying catheter will often be all that is necessary. The writer reports cases illustrating certain aspects of the subject.

**Kennedy: Uretero-Appendiceal Anastomosis.**  
*Surg., Gynec. & Obst.*, 1912, xv, 464.

By Surg., Gynec. & Obst.

This method of dealing with the right ureter occurred to Kennedy during the course of a radical abdominal operation for carcinoma of the cervix uteri, when it developed that a very extensive part of the right ureter was embedded in the carcinomatous infiltrated tissue. Subsequent work on the cadaver and dogs has demonstrated the feasibility of the technique. In certain cases, where the ureter cannot be safely implanted in the bladder, this disposition of the ureter is preferable to nephrectomy, lumbar drainage, or implantation in the colon. The chance of ascending infection from the appendix is far less than from the colon. The great mobility of the appendix vermiformis and its mesentery favors the operative technique admirably. It may be possible to drain both ureters into the appendix, but the plan seems to be better adapted for the drainage of the right ureter. Or in the case of complete extirpation of the bladder, implantation of the left ureter into the colon, with the right ureter into the appendix, would serve to prolong the function of the right kidney and consequently the life of the patient.

Gerlach's valve is far superior in its valvular action to any results that have thus far been obtained in the effort to reproduce the valve-like action of the vesical orifices of the ureters in the operation of transplanting the ureter into the colon direct. It is probably not possible, by oblique insertion or any other method, to reproduce anything like the effectiveness of the valve of Gerlach, even in its most imperfect state of development.

**Casper: The Treatment of Enlarged Prostate.**  
*Therap. d. Gegenwart*, 1912, liii, 385.

By Surg., Gynec. & Obst.

In this article the author urges that the *absolute* indication for prostatectomy be strictly adhered to, claiming that in this way only are the dangers and the rather dubious sequelæ associated with the operation justifiable. He holds that the absolute indications for the operation are: (1) the persistence of painful tenesmus and dysuria, after other forms of treatment have been tried; (2) impossible or painful catheterization; (3) recurrent hæmorrhage from the prostate; (4) recurrent calculi which resists removal; (5) cases where environment makes aseptic catheterization impossible.

The operation is contraindicated in (1) severe general nutritional disturbances such as diabetes; (2) severe pathological conditions of the heart and

kidneys; (3) advanced arteriosclerosis; and (4) in marked septic conditions of the urinary tract.

The author strongly advocated the suprapubic method of prostatectomy. E. S. TALBOT, JR.

**Chevassu: Suprapubic Prostatectomy and Local Anæsthesia** (Prostatectomie suspubienne et anæsthésie locale). 26th Cong. l'Ass. fran. d'Urol., Paris, Oct. 9, 1912. By Journal de Chirurgie.

Chevassu performs suprapubic prostatectomy with reduction of general anæsthesia to the minimum; a tube of chlorethyl which gives three minutes of anæsthesia suffices for him. The tube is applied at the moment of enucleation proper, the first steps of the operation having been performed under local anæsthesia. Patients who are operated in this manner do not undergo any kind of shock.

To insure real dependent drainage of the prostatic cavity during the days following the operation, Chevassu employs a special sound, which extends from the urethra to the hypogastric wound and which has two openings so arranged as to lie at about the center of the prostatic cavity. It suffices to attach the head of the penis to this sound to obtain a continuous irrigation which insures perfect drainage.

Loumeau appreciates the method of local anæsthesia for prostatectomy which Chevassu has praised, and is disposed to employ it should there be occasion; in patients who are very ill it seems to be particularly indicated. But he wishes above all to insist upon two points presented in the communication by his colleague. In the first place he wishes to insist that it is very easy to tear the mucous membrane which covers the enlarged prostate even with, or rather within, the neck of the bladder; there the finger-nail will largely suffice and there need be no recourse to instruments which are imagined to be required, but which he considers quite unnecessary. In the second place Loumeau would note that for ten years, after performing prostatectomy, he has been in the habit of inserting a special self-retaining sound in the ureter, and at the same time inserting the hypogastric tube of Freyer. This sound was specially manufactured by Gentile, is made of red caoutchouc, perforated at the end, and with two lateral openings. It permits dependent drainage and very effective lavages of the bladder; it diminishes urinary inundation of patients who have been operated by the suprapubic route; for the future it insures a more perfect caliber of the deep portions of the canal, which is sometimes, though rarely, rather difficult to catheterize after a prostatectomy.

J. DUMONT.

**Marion: Tamponing in Subpubic Prostatectomy** (Du tamponnement dans la prostatectomie suspubienne). 26th Cong. de l'Ass. fran. d'Urol., Paris, Oct. 9, 1912. By Journal de Chirurgie.

Marion reports the results of tamponing which he has practiced in prostatectomies since April, 1910. He recognizes that there are certain disadvantages



in tamponing, such as the desire to urinate which it provokes, the rise in temperature which it occasions from time to time, and the pains at its removal. But these disadvantages are of no importance, and are largely compensated for by the advantages which the method affords. One such advantage is the absence of any form of venous hæmorrhage at the moment of intervention, which makes the prostration of the patient infinitely less grave and leaves him in condition for better resistance in event of incontinence. Another advantage is that it is possible to leave the first dressing for three or four days without touching it. There is no risk of blood clots obstructing the tube.

Marion describes the technique of this tamponment, and the results obtained in 81 operations in which he has employed it. Among these he has had to record only five deaths, two of which were due to embolism, two to pyelonephritis, and one to uræmia.

Michon, having learned of the good results which Marion had obtained, has also had recourse to prostatic tamponment. In eight prostatectomies, he has been able to demonstrate that bleeding becomes negligible and that there are no clots. He finds no serious disadvantages in tamponing — at the most a slight rise of temperature; the procedure is therefore a good one.

J. DUMONT.

**Wolf: Superior Advantages of Wilson's Modification of Narath's Operation for Varicocele; Eight Cases.** *Deutsche med. Wchnschr.*, 1912, xxxviii, Oct. By Surg., Gynec. & Obst.

Varicocele is not infrequently associated with disturbances preventing the proper discharge of military duties. Wolf finds that these disturbances are often most marked during the period of development of the varicocele, while later the objective findings are quite frequently not in a direct ratio with the disturbances and complaints.

Simple excision of a few veins is not sufficient. An operation should be done so that restoration of the lumen of the removed veins is impossible and that elevation of the testicle should improve the return circulation in the remaining veins. Narath's operation considers these postulates. It is performed as follows: Splitting of skin and aponeurosis of the external oblique muscle. Double ligation and cutting of veins in inguinal canal as high up as possible. Isolation and removal of distal veins. Suture of internal oblique to Poupart's ligament according to Bassoni. The distal stump of veins is sutured to the muscles as high up as possible. Closure of external oblique aponeurosis and skin. Occasionally the venous stump is fastened to the periosteum of the os pubis or its fascial attachments.

Wilson modified this operation by doing away with a second resection of the peripheral stump, by pulling it through a buttonhole in the internal oblique muscle 2 cm. from its lower margin. The testis is pulled up until it can be palpated on the

anterior surface of the symphysis pubis. The veins are tied into a knot and this is fastened by a few sutures. The layers are closed after the method of Penoni if necessary. The operation has the advantage that a simultaneously existing hernial sac may be discovered and ligated (Narath found 5 hernias in 21 cases of varicocele). The somewhat voluminous venous knot is absorbed within three months after the operation.

E. C. RIEBEL.

**Gayet: Technique in Plastic Surgery of the Urethra After Urethrectomy** (Procédé de restauration de l'urètre après l'urétréctomie). 26th Cong. de l'Ass. franc. d'Urol. Paris, Oct., 1912.

By Journal de Chirurgie.

Certain persistent and recurring stenoses are associated with accidents, such as infiltration of urine or urinary abscesses, which leave cicatrices and fistulæ in their wake. Can we bring about the cure of these cases without very extensive resection? The author does not think so.

After these resections, numerous procedures may be employed in the plastic surgery of the canal. Immediate suture with previous deviation of the urine is a beneficial operation when the loss of substance has not been too great. In cases where this loss had been very extensive, Gayet once employed a venous graft and once dermo-epidermic graft, with cystostomy for deviation. In these two cases the graft took well. In two other cases which were still worse Gayet contented himself with fixing the two ends to the skin, like a gun barrel; then, in a second step, he performed a cutaneous autoplasty, after having previously drained behind the fistula. This method probably is the one which gives the most supple and the most capacious canal.

To sum up, we are to-day well armed surgically against grave stenoses; but the indications of each procedure must be checked by a forecast of the probable remote results.

Monie has had very good success in two cases of stricture, which he has treated with incision of the urethra and extirpation of the periurethral indurations without suture of the urethra.

The first was a case of stricture of the perineobulbar urethra. He treated it with external urethrostomy. By two stitches of catgut, the periurethral tissues were loosely united over a sound, which was then withdrawn. Drainage of the urine through the perineum was obtained by means of a self-retaining sound. During the following night the patient tore away his dressings and the sound, and the next day urinated through the incision. The sound was replaced and left for about ten days; after that he urinated through the incision — a veritable vulva — and was treated with dilatation according to Béniqué's method. On the twenty-first day the patient urinated through the penis. After two and a half years, and without any further dilatation, the patient's urethra will admit a sound number B 52.

The second case was a patient who was affected with multiple strictures of the penial urethra, asso-



ciated with periurethral infiltrations and infiltrations of the corpus spongiosum; the urethra admitted a bougie No. 12. Dilatation frequently caused bleeding and fever. The patient had already been operated twice with internal urethrotomy, and the second time ran a temperature for three weeks. The author intervened for the purpose of free discharge of the urethra. The urethra was incised into a veritable fibrous matrix of lardaceous tissue. At several points the diseased urethra had to be resected; the author then united the portions of the urethra which had thus been cut apart by a few stitches of catgut and loosely fastened the periurethral tissue by two stitches of catgut. Flat dressings were secured by two stitches with horsehair inserted into the skin. For ten days the urine was drained through the perineum; after that dilatation could be commenced, but the urine passed through the wound for a long time. The plastic surgery was successful, without fistulae. Eighteen months later, without dilatation for eight months, the patient's urethra will admit an olive shaped bougie number 22. Erection has been well conserved, and coitus is possible under normal conditions. J. DUMONT.

**Escat: Urethroperineal Plastic Surgery and Spontaneous Healing Without Suture** (De la réparation uréthro-périnéale spontanée après les interventions sans suture). 26th Cong. l'Ass. fran. d'Urol., Paris, Oct., 1912. By Journal de Chirurgie.

If plastic surgery of the urethra, by circular urethrorrhaphy after deviation of the urine, is to be applicable the lesions must be limited. This procedure is of real advantage only when the lesions are obstinate and resist the simpler measures.

On the other hand, repair of the ruptured, perforated or constricted urethra can also be obtained by resection of the duct in continuity, without suturing the divided ends, and without leaving a sound in place for more than a few days. Plastic surgery by placing pedunculated flaps may also be accomplished with conservation of the caliber of the urethra.

Certain conditions are indispensable for obtaining these results.

In the traumatic ruptures of the urethra in which a small band of the superior wall has been preserved, an immediate wide incision, the insertion of a sound for a number of days, then plastic dilatation according to the method of Béniqué and lavages with silver nitrate will in most cases suffice to restore the suppleness and the caliber of the urethra within the course of three weeks.

In strictures with periurethritis, the discharge of the urethra must be completely checked and all chronic foci and sclerotic masses must be removed. If necessary, the corpus spongiosum should be resected, the perineum divided as far as the prostate, and the transverse muscles of the perineum cut if there are deep ischiorectal foci. Internal urethrotomy should be supplemented by external section of all constriction rings. Self-retaining sound is to

be left at the most from eight to ten days, the time which is required for the wound to heal. The loss of skin is replaced by plastic work and, after the stitches have been placed, by passive movement at the top and at the base of the scrotum. Then pedunculated flaps are placed, and followed by dilatation according to the method of Béniqué and lavages with silver nitrate.

If this method should leave a fistula or an incurable ring, it nevertheless remains the best preparation for a resection or a delayed autoplasty, to be employed in case the two ends are separated as a result of traumatism or necrosis. The treatment in two stages constitutes the most rational procedure. J. DUMONT.

**Legueu and Berne-Lagarde: Criticism of Experimental Polyuria** (Critique de la polyurie expérimentale). *J. d'Urol.*, 1912, ii, 461.

By Journal de Chirurgie.

Among the various methods of investigating the function of the kidney, the test of experimental polyuria which has been demonstrated by Albarran has become classical. It is based upon two laws of general pathology established by Guyon and Albarran, which are the following:

1. The diseased kidney has a more constant function than the healthy kidney, and its function varies less from moment to moment the more its parenchyma is destroyed.

2. When of two kidneys only one is diseased, or more diseased than the other, it modifies its function less than the other when the urinary function begins to be disturbed; the difference between the two glands becomes exaggerated chiefly through the variations in the functioning of the healthy kidney.

3. In practice, the absorption of a certain quantity of water will render manifest the functional difference which exists between the diseased and the healthy kidney, a difference which without this test would probably not be noticeable. Aqueous polyuria begins immediately after the ingestion of the water, reaches its maximum in the second half-hour after the ingestion and diminishes in the third. The quantity of urine given off by the diseased kidney is less than that given off by the healthy kidney; when both kidneys are diseased, aqueous polyuria is more marked in the kidney which is less affected.

Moreover, the kidney which is less affected gives off a total yield of urea which is greater than that which is yielded by its congener. The elimination of urea is satisfactory when it reaches, in the adult and for a single kidney, from 1 gm. in 20 to 1 gm. in 80 during the two hours which the experiment lasts; it is medium if it is reduced to 0 gm. in 75 or 1 gm. in 85, and poor if below this figure.

The objection has been made to experimental polyuria that there is a possibility of there being at times a considerable polyuria due to catheterization (Clairmont, Kapraumer), and the further possibility of filtration of urine between the walls of the ureter



and the catheter (Kunetzky), so that many have abandoned it.

To prove its real value Legueu and Berne-Lagarde have made a whole series of tests upon 13 different patients who had previously undergone unilateral nephrectomy, thereby avoiding the excitative effect of the ureteral sound and its obstructive and arresting influence.

The results comprise 4 marked polyurias and 9 in which polyuria was not marked. Out of these latter, two had never been marked, under any tests; four were variable, sometimes good, sometimes bad in the same subjects, though no cause could be found for this variation.

The authors conclude from these facts that the elimination provoked is in great measure independent of the renal filter and that we must consider the important rôle played by the digestive tract, the liver, and the nervous system. Gastric dilatation and atony, portal hypertension, defective circulation due to weakness of the heart, momentary disturbance of the nervous system, are extrarenal factors which modify a test for polyuria even in kidneys which by themselves would function normally.

The following practical conclusion develops from this. When, in a patient who is about to be subjected to nephrectomy, a favorable polyuria is provoked from the healthy kidney, we may assume almost with certainty functional integrity of this kidney and undertake the operation. But when the test is not favorable, we are not justified in depending exclusively upon the evidence of the insufficiency of polyuria for accepting insufficiency of this kidney, and so rejecting nephrectomy.

J. TANTON.

**Stanton: The Diagnosis of Diseases of the Urinary Tract by the Combined Use of the Cystoscope and the X-Ray.** *J. Urol.*, 1912, viii, 511. By Surg., Gynec. & Obst.

Stanton believes that the data obtained by the cystoscope, the ureteral catheter, and the X-ray is so positive in character that the question of a diagnosis by these methods is in many respects not unlike a problem in mathematics or quantitative chemistry, where if each step in the work is accurate and in proper sequence the results are certain to be correct, but if any error be made the results are almost certain to be wrong.

It is only when the X-ray, the cystoscope, and the ureteral catheter are used in combination that an accurate diagnosis becomes possible in practically all cases; and the problem of diagnosis thus becomes largely one of combining the several diagnostic procedures in such a manner that the shortcomings of one will be supplemented by the positive findings of the other.

In order to obtain the best results the cystoscopist and radiographer must work together, and their combined technique should be so planned as to meet the following requirements.

1. The examination must be practically painless and must not be unduly prolonged.

2. The completed examination must give an orderly collection of accurate data which together will constitute all of the facts necessary for an accurate diagnosis.

3. The various steps of the examination must be so planned that one step does not interfere with another, else repeated examinations will be necessary; and private patients will not willingly submit to repeated examinations.

4. Any plan adopted must be capable of modification to suit individual cases without breaking the technique as a whole.

The problem which the writer has attempted to solve has been that of selecting the most useful procedures and combining them in such a way as to meet the above requirements. Especial emphasis is placed on the value of pyelography as a check to the data obtained from the ordinary X-ray plate and by the ureteral catheter. With proper team work the majority of the examinations, including the X-ray work, can be completed within thirty minutes, with no more inconvenience to the patient than is commonly caused by the passing of a sound.

**Marion: Is There a Vesical Prostatism — Prostatitis Without Prostate?** (Existe-t-il un prostatisme vésical, des prostatiques sans prostates?). *J. d'Urol.*, 1912, ii, 497. By Journal de Chirurgie.

It has long since been admitted that, besides the complete or incomplete retentions manifestly provoked by an increase in the volume of the prostate, there exist similar retentions not caused by any obstacle and provoked by vesical insufficiency; this is the so-called *vesical prostatism* of Guyon.

At the Congress of Urology, in 1907, Desnos found that out of 296 cases of prostatitis, 220 patients had tumorous prostates, while in 76 cases it was impossible to notice any increase in the volume of the prostate through the rectum; and yet these 76 patients all presented retention, while among the 220 one half had no retention.

Now, Moty and Arrese have shown, histologically, that the number of muscular fibers is by no means decreased in the veins of prostatitic patients without a prostate, and that the vesical atony of these patients is not occasioned by the poor state of the muscular tissues.

Marion likewise casts doubt upon the real existence of any prostatitis without prostate. In all the cases which he has observed, he has always been able to demonstrate that when the trouble began there always was something besides primary insufficiency of the musculature of the bladder, and very often he has been able to restore micturition by the appropriate intervention.

Under this category of prostatitic patients without prostate must be classed patients affected with a variety of affections:

First, patients with *urinary defects*, that is those who have suffered a lesion of the nervous system,



which so far has not become manifest except through disturbances in micturition: tabes, particularly if it begins in the bladder.

Into this group belong also the cases of vesical paralysis of reflex origin, which are provoked by renal suppurations.

To the First International Congress of Urology, Marion communicated a case of complicated grippe pyelonephritis, in a woman who had presented complete retention of urine but in whom the retention passed away gradually as soon as the pyelonephritis became better.

Second, *prostatic patients with a prostate*, but in whom the hypertrophy is slight and quite essentially vesical and escapes ordinary examination. Some adenomata of a few grammes in weight may also cause complete retention, and micturition is re-established when they have been removed.

These hypertrophies cannot be diagnosed except by cystoscopy. This enables us to find either one of two conditions: either there is a clear malformation of the neck posteriorly, depending upon the existence of a median lobe; or it may be shown that the neck and the urethral orifices can be seen at the same time, a condition which is produced by elevation of the neck and is caused by an intraprostatic adenoma.

A median lobe, sufficiently movable to close over the orifice of the vesical neck, mechanically brings about an early and complete retention. On the

other hand, in the cases of intrasphinctral adenomata, which are too small to obstruct the urethra or the vesical neck, we probably have to deal with phenomena of vesical inhibition which are provoked by lesions of the neck or of the posterior urethra.

Third, patients who are affected with *vesical or urethral lesions*. The author presents, in particular, the case of a patient who showed symptoms of vesical prostatism. When the piece, which had been removed by ablation of the vesical neck and the posterior urethra, was examined it was found that a papilloma in a state of degeneration adhered to the posterior urethra. Contractility of the bladder became normal again after the intervention.

In brief, the diagnosis of vesical prostatism must not be made except after very minute examination of the patient; in the cases in which the examination has failed to reveal any lesion it must not even then be made until after failure of an intervention.

When we have a prostatic patient without prostate, intervention in the form of suprapubic cystostomy is always indicated, for it is calculated to re-establish micturition. It also enables us to treat the lesions which have escaped detection in the explorations. In the cases where nothing further is found it enables one to suppress the vesical neck, this operation being advisable where nothing else will explain the symptoms of prostatism.

J. TANTON.



## SURGERY OF THE EYE AND EAR

**Cohn: Technique of Operation for Diseases of the Lachrymal Ducts** (Zur Operationstechnik bei Erkrankungen der Traenenwege). *Arch. f. Laryngol. u. Rhinol.*, 1912, xxvi, 523.

By Surg., Gynec. & Obst.

An endonasal method for the removal of obstructions in the nasolachrymal duct, founded upon experiments on cadavers, is proposed by the author. The plan is the following: With a circular incision parallel to the anterior border of the median concha, 1 cm. in front of it and ending at the end of the first third of the inferior concha, the mucosa is cut and pushed back together with the periosteum. A special instrument with a blunt end, curved 4 mm. to the side, is then pushed backwards along the hard bone of the frontal process until it breaks through the thin lachrymal bone, the curved end of the instrument being too short to injure the opposite wall, which looks toward the maxillary sinus. Then a similar instrument, with a curved end of 7 mm. length and a sharp edge, is introduced through the lachrymal bone and the cutaneous canal cut. Into the thus opened canal a special constructed forceps (Stanze) is introduced to remove the obstructing parts, cutting only the processus frontalis and parts of the cutaneous canal contained in it.

**Coover: A Résumé of Present Operative Treatment, for Trachoma, with Description of the Author's Method of Grattage with Strips of Sterilized Sand Paper.** *Ophthalm.*, 1912, ix, 28.

By Surg., Gynec. & Obst.

Coover gives a review of the present operative treatment of trachoma, and recommends his method of grattage with sterilized sand paper. He uses No. 0 or No. 00 sand paper, sterilized by dipping it in alcohol and then burning it off. The lid is everted with Darrier forceps. A horn spatula is used to protect the cornea, the sand paper is rolled over the index finger, and the entire lid surface is thoroughly rubbed, a general anæsthetic being used.

Dr. D. W. White and Dr. George Phillips reported 200 cases in the United States Indian service treated by this method with good results.

C. G. DARLING.

**Wood: The Surgical Treatment of Trachoma.** *Chicago Med. Record.*, 1912, xxxiv, 507.

By Surg., Gynec. & Obst.

In this article the author discusses (1) the surgical measures used in the routine treatment of trachoma, (2) the surgical removal of the diseased tissues, and (3) the operative procedures in the treatment of pannus. Under the first group he takes up cauterization of the diseased follicles as a whole or individ-

ually, noting their value but warning against the danger of too deep scarring if thoroughly done. Electrolysis, either after scarification, with a zinc electrode, or by plunging the electrode into the individual granules, is mentioned and discussed.

X-ray cures rapidly with the least deformity of the lid, is painless, and the pannus clears up very rapidly. Similarly, radium is of value.

The ordinary surgical procedures do not insure against relapse, because the seat of predilection for the trachoma follicles is in the upper fornix, hence the difficulty to reach by surgical attack. To meet this the removal of the trachomatous tissue has been advocated and practiced with good results.

The author believes this procedure to be contra-indicated: (1) in recent or acute forms of trachoma; (2) in cases where there is reasonable prospect of early cure from any other form of treatment; (3) in the most advanced stage of the disease in those cicatricial forms that have gone on to shrinking of the sac, and in which there are probably few or no active trachomatous nodules; (4) in cases in which it is possible to remove, one by one, the discrete and scattered trachoma nodules from the tarsus itself.

The operation is indicated: (1) in long standing cases of trachoma not amenable to other forms of treatment, in which the lids show trachomatous infiltration, with granulation deposits in the connective tissue of the retrotarsal folds, whether the cornea is affected or not; (2) especially if there is thickening and enlargement of the tarsus itself; (3) in evident disease of the folds without apparent thickening of the cartilage, but the cornea is implicated; (4) in cases in which there has been a cure of previously existing granulations in the tarsal folds, but there remain deep-seated foci in the tarsus and submucous connective tissue. It is desirable that the eye be as quiet as possible, but not essential.

He then discusses the muscular supply of the lids, and describes the operation, which consists in (1) incision at the bulbar margin of the diseased tissue in the retrotarsal fold, transverse through the mucosa, with three stitches of three days gut passed through the bulbar margin; (2) second incision the length of and parallel to the lid edge as nearly as possible in the healthy conjunctiva; (3) excision of the conjunctiva and the tarsus down to the muscle; (4) careful approximation of the two margins. He then discusses and meets the objections to this operation.

Lastly, he discusses the removal of a strip of conjunctiva and submucosa surrounding the cornea as a cure for pannus; the cautery of the corneal vessels at the limbus after curettage of the surrounding episcleral tissue; and the formation of a subcon-



junctival blood clot around the cornea by the puncture of a vessel through a very small incision. All these methods have been used with good results.

E. B. FOWLER.

**Weidler: Keratitis Neuroparalytica After Removal of the Gasserian Ganglion.** *N. Y. St. J. Med.*, 1912, xii, 558. By Surg., Gynec. & Obst.

Weidler reports two cases of neuroparalytic keratitis following removal of the Gasserian ganglion, one case in which the eye was enucleated.

He says that it is the consensus of opinion of Cushing, Dearer, Horsley, Keen, and Frazier, that the removal of the Gasserian ganglion is extremely dangerous, with a mortality rate from 5 to 50 per cent, destructive neuroparalytic keratitis following many of the cases.

Over 300 cases of alcohol injections are collected in this paper, with only one serious keratitis; whereas in the 70 cases of gasserectomy, keratitis followed in a considerable number, and in four cases enucleation was done. He advises that "alcohol injection" treatment should be advised in all cases of douloureux, not only as the first form but in nearly all, as the only treatment.

C. G. DARLING.

**Tinker: The Surgical Treatment of Exophthalmos.** *J. Am. M. Ass.*, 1912, lix, 989.

By Surg., Gynec. & Obst.

While various procedures are mentioned in the treatment of exophthalmos from differing causes, this paper chiefly concerns osteoplastic resection of the outer wall of the orbit. In the treatment of obstinate and extreme protrusion in exophthalmic goitre, and also for orbital tumors, this operation has perhaps not been as commonly practiced as it deserves to be. The operation may be indicated for the relief of very disfiguring deformity, extreme pain, or because of injury to the eye from exposure and ulceration of the cornea. The original Krönlein incision leaves a larger visible scar than is necessary, and is likely to shatter the fragile bones of the wall of the orbit and injure certain filaments of the facial nerve, making facial paralysis a frequent result.

An incision is proposed based on study of the anatomy of this region which avoids these disadvantages. Cuts are given showing distribution of the facial nerve, and a triangle of safety for the facial nerve, in which the incision may be placed. Twenty-five dissections plotted on the outline record chart of the Anatomic Laboratory of Cornell University Medical College, at Ithaca, were studied and verified in plotting this triangle. The use of a drill and a Gigli saw are suggested to avoid shattering the bone in making the osteoplastic flap. There seems no apparent reason why the operation should endanger life or the function of the eye if properly performed. Removal of serious danger to vision, relief of severe pain in certain cases, and correction of a very disfiguring deformity, makes the osteoplastic resection of the outer wall of the orbit a most satisfactory operation to patient and surgeon in appropriate

cases. A very satisfactory result is reported fourteen months after operation on a patient who had had a previous thyroidectomy for exophthalmic goiter, but whose exophthalmos persisted as a result of a hæmangioma situated on the posterior surface of the eyeball and along the optic nerve.

**Ruttin: The Pathology of Labyrinthitis.** *Ann. Otol., Rhinol. & Laryngol.*, 1912, xxi, 714.

By Surg., Gynec. & Obst.

The author takes up the indications for operative treatment in diseases of the labyrinth in seeking for the underlying principles.

He is guided by the fundamentals: never to destroy a still functioning labyrinth, and on the other hand to drain any location where there is pus.

He classifies the condition according to the clinical picture into (1) circumscribed labyrinthitis, (2) diffuse serous secondary labyrinthitis, (3) diffuse serous induced labyrinthitis, (4) diffuse suppurative manifest labyrinthitis and (5) diffuse suppurative latent labyrinthitis.

In the suppurative forms function is destroyed.

He gives the indications for opening the diseased labyrinth as follows: Every suppurative labyrinthitis (diagnosed on a complete loss of function) should be operated both in the manifest and in the latent forms. The radical mastoid operation is done in the first three types, the circumscribed and the two serous forms, because the labyrinth is not entirely destroyed and its function is partially retained. The partial impairment of function need not be lasting, and the serous types often heal very readily when the focus of infection is removed. Brain complications rarely occur without the disease going through the suppurative stage, at which time the indications for drainage of the labyrinth will still be timely.

C. V. FOWLER.

**Wood: The After Treatment of Mastoid Operations.** *Ann. Otol., Rhinol. & Laryngol.*, 1912, xxi, 627.

By Surg., Gynec. & Obst.

The author gives a detailed account of the recognized methods of treatment, both operative and after treatment, at such length that only the briefest outline of the article can be given here.

He says that any mastoid operation is but the commencement of a course of treatment, the aim of which is the arrest of discharge with the preservation of life and hearing. In all stages the greatest care should be exercised to obtain aseptic conditions.

He then gives in detail with after treatment: Wilde's incision; cortical mastoid (of Schwartz); the "Heath conservative mastoid operation," in which the stitches are removed the following day, although the tube is retained until the discharge has ceased. The ear is inflated daily by Valsalva's method, to clear out the discharge and to prevent adhesions. The result of this technique is that there is average healing in six weeks.

The author then discusses the after effects of this form of treatment, especially tinnitus and adhe-



sions in tympanum and their prevention, and also permanent perforation and continuance of the discharge.

C. V. FOWLER.

**Lewis: Cellular Changes During and After Acute Mastoiditis with a Consideration of the Inadvisability of Certain Operative Procedures.** *J. Am. M. Ass.*, lxx, 1142. By Surg., Gynec. & Obst.

This paper deals only with general principles underlying the surgery of acute purulent mastoiditis. Lewis' propositions are the following: In operative treatment of acute purulent inflammation of tympanomastoid structures, any procedure having for its object aught else than relief of pressure and adequate drainage is a surgical error; the mucoperiosteum is a very important lymphatic organ of great absorptive and recuperative powers, and should be accorded the utmost conservative surgical handling; the antrum should be opened when indicated, but its mucoperiosteum should not be destroyed by curetting or other destructive procedure; free drainage of tympanum, aditus, and antrum by means of a large incision in the drumhead, kept open by re-incision as often as necessary, should be regarded as a surgical indication of first rank.

Anatomically three types of mastoid process are encountered; nondiploetic, 40 per cent; mixed pneumatic and diploetic, 38 per cent; and wholly diploetic, 22 per cent. In all mastoids, irrespective of type, diploe is absent from at least three sites — the promontorium, the inner antral wall, and the internal auditory meatus. All non-diploetic bone in the mastoid is solely dependent upon the mucoperiosteum for nourishment and for serum and cytotic protectives.

The details of pathologic changes during acute purulent mastoiditis are considered with the foregoing in view, tracing development of empyema antri, mastoid abscess proper and acute osteomyelitis; also such developments as Bezold's perforating abscess, epimastoid, epidural and perisinous abscess. Attention is specially called to the common fallacy of mistaking intensely inflamed but viable mucoperiosteum for "granular detritus," and its consequent destruction by the curette. The most important protection to the individual during acute purulent mastoiditis comes from rupture of the membrana tympani and the formation of organized exudate surrounding the infected areas. Large incision of the drumhead should be made early, and continuation of this drainage maintained all through the disease. Empyema antri needs no further surgical treatment. Early free opening of the mastoid process and establishing thorough drainage is indicated additionally in cases of abscess and acute osteomyelitis. Complete exenteration, as very widely advocated and practiced today, is not only unnecessary, but by destroying Nature's safeguards, the organized circuminflammatory exudates increases liability to internal ear and intracranial

complications, and renders healing as protracted and difficult as possible. And after complete healing the much enlarged antrum is lined with a cicatricial basement membrane covered with flat epithelium, in place of the mucoperiosteum, and remains a step-off cavity peculiarly defenseless in the presence of subsequent infection. Lewis believes that the percentage of intracranial and internal ear complications is higher in and about the centers where mastoid exenteration is practiced upon acute purulent mastoiditis solely because of the violation of fundamental surgical principles.

**Ballance: Epithelial Grafting as a Means of Effecting the Sure and Rapid Healing of the Cavity Left by the Complete Mastoid Operation.** *Ann. Otol., Rhinol. & Laryngol.*, 1912, xxi, 598. By Surg., Gynec. & Obst.

Two conditions are necessary for the success of the operation for cure of chronic otorrhœa: First, all disease must be removed; second, the large bone wound must be made to heal from the bottom. The first condition can be carried out with certainty in the large majority of cases. The second condition, however, is often more difficult to effect; and it is often only after many weeks or even months that the large cavity will finally be healed, and in a certain number of cases a permanent discharging sinus is left. The reason for this slow healing is that the denuded bone which forms the base of the cavity left after a complete mastoid operation is very slow in forming granulation tissue. Furthermore, the operation wound is not flat, and if exuberant granulations are allowed to grow they may shut off deep pockets, which favors the formation of a persistent discharging sinus.

The advantages gained by grafting the mastoid cavity are: (1) rapid healing of the entire bone, cartilage and soft parts on ordinary surgical principles; (2) immediate protection of the raw bone, and the lessening of the pain from subsequent dressing and of the liability of reinfection of the bone. Furthermore, there is a considerable shortening of the time that skilled attention is necessary, and also an improvement in the hearing over the old result when grafting is not used.

The technique of the grafting is very similar to its application elsewhere. The complete mastoid operation is done, and the grafting done immediately or at a later date. The grafts are obtained from the thigh in very thin strips. They are carried by a section lifter and carefully applied to: (1) the anterior wall of the cavity formed by the anterior boundary of the tympanum and attic; (2) the anterior part of the roof of the cavity formed by the tegmen tympani and the superior wall of the enlarged osseous meatus; (3) the interior walls of the attic and tympanum; (4) the tegmen antri; (5) the tuberosity formed by the horizontal semicircular canal and the Fallopiian canal, and (6) the inner wall of the antrum.

JAMES H. SKILES.



## SURGERY OF NOSE, THROAT, AND MOUTH

**Hirsch: The Operative Treatment of Tumors of the Hypophysis with Endonasal Methods** (Die operative Behandlung von Hypophysentumoren nach endonasalen Methoden). *Arch. f. Laryngol. u. Rhinol.*, 1912, xxvi, 531. By Surg., Gynec. & Obst.

The author gives the detailed histories of 26 cases of tumors of the hypophysis in which he performed endonasal operations. This is done either by the ethmoidal method, which is performed in from three to four sittings, or by the septal method. In the first sitting the median concha of one side is removed. After some days the posterior and also part of the anterior ethmoidal cells on the same side are removed, baring the anterior wall of the sphenoidal sinus, which is resected some days later; and in the fourth sitting the sella is opened. By the septal method, access to the sphenoidal sinuses and to the tumor is gained by submucous resection of the septum; both sphenoidal sinuses are opened from the median line. This operation is preferable, as it may be done in one sitting in case the fissura olfactoria is wide, and as there is less danger of infection because the removal of the mucosa on both sides of the septum creates a median cavity separate from the nasal cavity.

Of the 26 operations, three ended fatally, or 11.5 per cent, which is rather favorable in comparison to the results of Schlösser's method, with 37.8 per cent mortality (45 operations), and of von Eiselsberg's method, with 28.5 per cent (14 operations). Of 32 operations with Kanavel's method and that of Halsted and Cushing, 6 ended fatally, or 13.7 per cent. Of the author's three fatal cases, one died 20 days after operation from meningitis; the patient was much demented and had pulled out the tampon himself. The second died 8 days after operation from pneumonia; the third death occurred directly as a result of the operation from hæmorrhage into the tumor. Three operations had no effect (degeneratio adiposogenitalis, with marked disturbance of vision; acromegaly; and the third with disturbed vision of 12 years' standing). Here the tumors had grown not only toward the sella, but also toward the base of the skull. The optic nerves could not recover as a result of the long standing condition.

In five cases the improvement was only temporary (2 to 6 months); in two of them the tumor was not removed, and in one there was an intracranial chondroma. The remaining 14 cases were markedly improved, though in some the vision had been much impaired, and in others either the intelligence and memory were disturbed or there were other psychic anomalies. The later cases became mentally normal after the operation. One of the

patients recovered her regular menses after the operation.

From the operative standpoint we must differentiate three groups of tumors: (1) Chiefly intracranial solid tumors with high grade disturbance of vision and marked involvement of the sella (13 of author's cases). The removal of the bottom of the sella and part of the tumor is sufficient in the majority of the cases to effect a marked improvement of the local pressure symptoms, and often also of some of the general symptoms. (2) Intracellular solid tumors. These cause no disturbance of vision; in the radiogram they show an enlarged sella with no widening of its entrance and offer very favorable chances, as they can be reached in their entire extent (2 cases of author). These intracellular tumors can only be diagnosed when they cause general symptoms, above all, acromegaly; otherwise only an X-ray may lead to their discovery. (3) Cystic tumors. Diagnosis can only be made by operation. They offer very favorable chances, as the opening and partial removal of the wall of the cyst is sufficient to relieve the pressure symptoms; the size of the tumor plays no part in the recovery.

Operation is indicated in every case with disturbed vision, no matter whether we deal with an intracranial or intracellular tumor. Acromegalic deformity without visual disturbance is in itself not sufficient indication for an operation, though the acromegalic symptoms partly disappeared after operation, and it must be considered that on account of their intracellular location they offer favorable chances.

**Freer: The Submucous Resection of the Nasal Septum.** *J. Am. M. Ass.*, 1912, lix, 1127.

By Surg., Gynec. & Obst.

This article is the last of eleven written by Freer on this subject since 1902. Each of these papers has marked an advance in the perfection of the method, which has progressed from crude beginnings to a procedure which permits the removal of the most difficult deflections with mathematical certainty, with no injury to the patient, the least traumatism, and with little or no pain under local anæsthesia.

The description of the operation is preceded by an explanation of anatomy of deflections as Freer has found it. The important crossing of the periosteum and perichondrium in the vomerocartilaginous articulation, first described by Freer (*Jour. of Ophth. and Oto-laryng.*, 1907), is clearly set forth, with the reasons why it makes the dull denudation of the deflection advocated in most text-books an impossibility.

Except in younger children, local anæsthesia, produced by massaging the mucosa with a mud of



cocaine flake crystals and adrenalin, is used. The operation is performed with the patient lying on an operating chair. A mucous flap, turned forward, is made to give a wide entrance to the operative field and to protect what Freer calls the dorsal or supporting strip of cartilage left under the nasal bridge. Freer refers to the sunken nasal bridges which have followed the prevalent method of performing the submucous resection through an anterior incision with excision of a piece of cartilage with the swivel knife, an implement which is not only used without the aid of sight but is incapable of accurate guidance, so that it is liable to cut close to the under surface of the nasal bridge. The anterior incision leaves the cut cartilage unprotected in the wound, so that it is liable to soften and become absorbed. In distinction from this, the Freer flap permits the accurate making of the dorsal incision with the aid of sight, and at the exact distance from the nasal bridge desired by the operator. In addition, the flap thoroughly blankets the dorsal strip, so protecting it from absorption.

Freer objects to the denial of the submucous resection to children so frequently made, a denial which deprives them of the benefit of free nasal breathing during their growth. Freer has never seen anything but the best results from his operations upon one hundred children, and attributes the difficulty experienced by others to the employment of the popular Killian-Ballenger method, which is unable to cope with anything but simple cases.

The resection of the bony deflection is carefully described, and must be read in the original. Nineteen excellent illustrations accompany the article.

W. G. REEDER.

**Borchers: Enucleation of the Tonsils with the Finger.** *München. med. Wchnschr.*, 1912, lix, Oct. By Surg., Gynec. & Obst.

Borchers uses ethyl chloride as anæsthetic, with the drop method. He operates during the analgetic stage, which is reached within two minutes. The reflexes should be present to avoid aspiration of the blood. The head is slightly elevated and somewhat to the side. The anterior pillar is detached by a curved elevator. If adhesions are present, curved scissors and forceps are necessary. After detachment of the anterior pillar, the enucleation of the tonsil from its bed is performed by the index finger. This is done by stripping in an upward and downward direction. A few seconds, as a rule, suffice to finish the procedure, so that the tonsil is held by a thin pedicle passing in the direction of the base of the tongue. This pedicle may be torn off in children; in adults detachment by scissors is advisable. The operation can be done by touch alone; eye control is not necessary. The patient is allowed to come to and rinse his mouth before the second tonsil is removed.

The author cites as advantages of this method, its simplicity, short duration, the slight hæmorrhage, and impossibility of injury of either anterior pillar or carotid artery if abnormal in its course. Very

small tonsils, especially very soft ones and those which are closely adherent, should not be removed in this manner.

E. C. RIEBEL.

**Levinstein: A New Pathologic Tonsil of the Human Pharynx** (Ueber eine neue "pathologische Tonsille" des menschlichen Schlundes, die "Tonsilla lingue lateralalis" und ihre Erkrankung an Angina). *Arch. f. Laryngol. u. Rhinol.*, 1912, xxvi, 687.

By Surg., Gynec. & Obst.

Levinstein describes a case of angina of a pathologic tonsil on the tongue of a 29-year-old male laborer. He denominates this disease, which he says is unique in medical literature, as "angina habitualis tonsillæ lingue lateralalis" in differentiation from the angina of the ordinary lingual tonsil, which should be called "angina tonsillæ lingue medialis" or "angina tonsillæ radialis lingue." The case is of clinical interest because it represents an acute inflammation of a tonsil which does not exist in the normal and which was probably produced by acute or chronic irritation of the mucosa, which caused the angioma of the new tonsil. Anatomically it is of interest because it proves that pathologic irritation of the mucosa in the human pharynx may produce new organs which can neither macroscopically nor microscopically be differentiated in their structures from the normal tonsils. The exact location of the described new formation is bilaterally at the posterior border of the tongue in front and laterally of the plica triangularis and the anterior palatine arch.

**Albrecht: Hot Air Treatment in Laryngology.** (Heissluftbehandlung in der Laryngologie). *Arch. f. Laryngol. u. Rhinol.*, 1912, xxvi, 509.

By Surg., Gynec. & Obst.

For producing active arterial hyperæmia for the treatment of diseases of the larynx with hot air, the author had a box of asbestos wood constructed with such excisions as to fit over the upper part of the chest, the neck, the chin, and shoulders as the parts to be exposed to heat. To make this cover more tightly fitting, asbestos is stuffed into the gaps, and thus a closed room is created over the parts to be treated. The cover or box has a ventilation hole on top, and into the side a sheet iron tube is inserted which has a funnel bending down at its end. A gas jet is fixed to a holder in such way that it can be lowered or raised to regulate the heat. It should never be placed under the funnel before being lighted, else gas will escape into the funnel and the box when the jet is opened, and seriously burn the patient when it is lit. The patient is in a lying position; the exposure is one-half to three-quarters of an hour, to an intensity of heat of 100° to 110° C. This heat produces mostly an agreeable sensation in the throat, and the treatment can be repeated daily without injury to the skin of the patient.

Good results are promised: (1) in acute laryngitis; (2) in subacute and chronic laryngitis, especially laryngitis sicca, if the disease is not of too long standing and the symptoms not too advanced and



severe; (3) in acute and chronic œdemata of the larynx, especially of the tuberculous type (here the good results are due to the resorbing character of the hyperæmia); (4) stenosed scars of the larynx may be favorably influenced by the treatment, and, though author had one good result, he does not yet recommend it as reliable.

In the report of the author's own cases treated with this method, three were of very severe acute laryngitis, one of which was markedly improved by the treatment but did not continue; the two others continued until cured. Of ten cases of laryngitis sicca, the treatment had to be stopped in three cases of long standing and complicated with pharyngitis sicca and ozæna. In two cases there was a marked improvement, and in five the cure effected by the treatment was perfect. In six cases of chronic and two cases of acute œdema, the result was quite remarkably favorable. The histories are given in detail and illustrated, as well as the treatment.

**Lautenschlaeger: Double Vocal Cords** (Ein Fall von Doppelbildung der Stimmbänder). *Arch. f. Laryngol. u. Rhinol.*, 1912, xxvi, 706. By Surg., Gynec. & Obst.

A twenty-year-old patient came to clinic for a submucous operation of the septum, and when examined it was found that he had double vocal cords bilaterally. During phonation the vocal cords could be seen, slightly reddened, somewhat thickened, closing well, and easily movable. During aspiration, however, below the level of the normal cords a second cord could be seen on either side. They were snowy white, shining like tendons, extending from the anterior commissure to the vocal process; they were about one third thicker than the upper cords, lying about 1 mm. deeper than these and separated from them by a groove. When the upper layer was in motion, the two lower cords participated in the movements, but they could not be seen during phonation because they were hidden below the upper contracted cords. The closure of the glottis seemed good, but the voice was somewhat hoarse, probably because the upper cords had less tendon layers than the snow-white lower ones and were softer. The findings were the same on both sides. The double formation seemed to be congenital. The patient had never been seriously ill, and only hoarse from infancy on. Croupous ulcers, tuberculosis and lues are excluded in this case as cause of the twin formation. The author proposes to fill the gap between the cords with paraffin and thus to form one thicker cord on either side.

**Campbell: The Treatment of Cleft Palate.** *Am. Medicine*, 1912, xviii, 545. By Surg., Gynec. & Obst.

Campbell urges that there should be some definite standard of treatment upon which the profession is agreed, and deprecates the old traditional dictum of operating on harelip at the third month and cleft palate at the third year as physiologically irrational and surgically unnecessary.

The old dictum of delay has nothing to commend it. It is fallacious in premise and conclusion, for it is obvious that cleft palate is a serious menace to the nutrition of the infant, since it is impossible for the child to suckle or satisfactorily swallow the food introduced into the mouth. Later, articulation and phonation are seriously compromised; the defective nasopharyngeal wall permits the air current to escape through the nose and makes the distinct articulation of consonants impossible. The tools of speech must be normal in order to have correct speech. Not only this, but unless the mouth and nasal cavities are separated early in life, normal physiological function is impossible, hence normal development is seriously compromised. Vital capacity is impaired, the physiognomy is altered, and the individual is physically and intellectually a defective. It is certain that if the normal development of the nasopharynx and the surrounding structures depends upon its normal physiology, the nose and mouth cavities should be separated as early as possible. The child cannot develop so long as its supply of air and food is deficient. The proper time to operate for cleft palate is as soon after birth as possible; nothing is gained by delay except the consequences of faulty nutrition. The plasticity of the newborn tissues, their capacity for repair, the trifling hæmorrhage, the slight risk of life, the possibility of obtaining a broad, well-vascularized flap before the teeth have begun to encroach upon the mucous membrane, combine to make early infancy an opportune time for repairing the defect.

The author has no hesitation in commending the "Lane operation" as the most satisfactory for all varieties of cleft, providing the operation is done early. It is ingenious, rational, and satisfactory, and far superior to the older plastic methods.

The principle of the operation is to close in the interval between the edges of the cleft by mucoperiosteum in the case of the hard palate, and by mucous membrane and submucous tissue in case of the soft palate. The features of the operation are the breadth of the flaps and the ingenious method of overlapping them so that the fissure is closed in by a curtain of tissue on which there is no tension and in which the play of the muscles is unimpaired. If harelip exists, the defect is repaired at the same time as the cleft palate.

One of the greatest difficulties which the author encountered was to get the child in a stable position for operating; this was satisfactorily solved by Miss Gothson, superintendent of Trinity Hospital, who devised a satisfactory sling by means of which the patient is held in a position which, while adjustable, does not shift. It consists of a sheet pinned about the child's body from the neck and extending beyond the feet so that the weight is borne at the shoulders, and the lower part of the sheet fastened to the operating table. Thus the child becomes a part of the adjustable portion of the table, and gives the operator a steady field on which to work.



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## SURGERY OF THE HEAD AND NECK

### Head

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# INTERNATIONAL ABSTRACT OF SURGERY

MARCH, 1913

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### ANÆSTHETICS

**Kaerger: Direct Anæsthesia of the Smaller Subcutaneous Veins in Operations on the Hands and Feet** (Ueber die Anwendung der directen Venenanæsthesie bei den kleineren subkutanen Venen zu Operationen an der Hand und am Fuss). *Arch. f. klin. Chir.*, 1912, xcix, 983.

By Surg., Gynec. & Obst.

One hundred and fifty operations on the hands and feet were performed at the University Surgical Clinic and Policlinic in Berlin (Dr. Bier) under direct anæsthesia of the smaller veins. A 30 cc. syringe, with a curved nozzle and needles  $\frac{3}{4}$  to  $1\frac{1}{2}$  mm. in diameter, is necessary, using novocain solution as the anæsthetic. The hand or foot is held high and an elastic bandage applied in spica turns in such a manner as to eliminate the parts for operation. Novocain is then injected under the skin and near the vein, making a wheal over the latter. The skin is then incised for  $\frac{1}{2}$  to 1 cm. and the vein lifted with Dechamp's needle and a silk thread. The vein is tied at its proximal end, and another ligature is placed under the distal end but not tied. The needle is inserted in the distal end of the vein and the ligature tied tightly over it. Ten to thirty cc. of a 1 per cent novocain at body temperature is injected. On removing the needle the vein is ligated and the skin closed. The anæsthesia is complete and the bandage is removed. Hæmostatic measures are not necessary. There is no after pain. Infection was never encountered.

Sixteen operations were performed on the feet for ingrown nails, amputation of toes, removal of foreign bodies, and incising infected wounds. One hundred and thirty-four operations were done on the hands for the removal of foreign bodies, tumors of metacarpal bones, suture of tendons, amputations, whitlow, and phlegmon. In cases of recent suppurative, phlegmon with fever, œdema, diabetic

gangrene, and arteriosclerosis, venous anæsthesia is contraindicated. Properly given, venous anæsthesia proved reliable in every case.

**Pinneo: Anæsthesia by Pharyngeal Insufflation.** *J. Am. M. Ass.*, 1912, lix, 1862.

By Surg., Gynec. & Obst.

Pinneo says the present age demands, not so much the discovery of new anæsthetics, as refinement of methods and greater accuracy in the use of the materials we have without the use of elaborate apparatus. He points out two common errors in ether anæsthesia — intermittent administration, to which many fatalities in tonsil-adenoid operations are due; and the extraction of heat from the lungs, amounting to about 21,000 calories of body heat for every ounce of ether used. He advocates, in place of this, insufflation of ether vapor at  $87^{\circ}$  F. into the pharynx, this method having the additional advantage of allowing operation and administration in the same field. He describes a simple portable apparatus which he has used for three or four years with great satisfaction, originally for throat and head operations; but with this method an anæsthetic so dry, even, and controlled was obtained that he has come to use it for all kinds of operations. The four essential elements of anæsthesia by pharyngeal insufflation are: (1) Steady air pressure; (2) a cock maintaining evenly the delivery of vapor to the patient; (3) the catch bottle interposed between the ether container and the delivery tube; (4) a heating system which will maintain evenness of temperature (incandescent light).

L. G. DWAN.

**Teter: The Limitations of Nitrous Oxide with Oxygen as a General Anæsthetic.** *J. Am. M. Ass.*, 1912, lix, 1849.

By Surg., Gynec. & Obst.

Teter says that, of the general anæsthetic agents now employed, the combination of pure nitrous



oxide with oxygen, when properly administered, is the safest, most agreeable, and freest from post-anæsthetic complications. It is, however, the most difficult general anæsthetic to administer properly.

He advocates morphin and atropin preliminary to anæsthesia. A satisfactory anæsthesia for general surgery cannot be obtained with nitrous oxide and atmospheric air, because nitrous oxide is not respirable with less than 7 to 20 parts of pure oxygen, and as the air contains only about one-fifth oxygen there would be only about 2½ parts of oxygen available. An even flow of both oxygen and nitrous oxide is most essential. The gases should be under control, with definite known pressures. No definite percentage of the gases is uniformly satisfactory. All anæsthetics are safer when administered warm — about 90° F. is the best temperature for inhalation. The proper amount for rebreathing to prevent acapnia (diminished carbon dioxide in the blood and tissues) must be governed by the symptoms in each individual case. Nitrous oxide and oxygen were administered with positive pressure for intrathoracic surgery in 18 cases without encountering even a temporary cessation of respiration. There is no operation performed at the present time in which nitrous oxide and oxygen cannot be employed. This anæsthetic is contraindicated in children under five years, in old people in whom degenerative processes are manifested, and in strong, vigorous, rough men, whose habits include excessive use of tobacco and alcohol. The ideal patients for nitrous oxide and oxygen anæsthesia are the very ill, the anæmic, the debilitated, and those possessing low vitality from any cause.

L. G. DWAN.

**Gwathmey and Woolsey: The Gwathmey-Woolsey Nitrous Oxide-Oxygen Apparatus.** *N. Y. M. J.*, 1912, xcvi, 943. By Surg., Gynec. & Obst.

The Gwathmey-Woolsey apparatus has been developed in accordance with the principles recognized as essential in the evolution of nitrous oxide and oxygen anæsthesia, especially those utilized by Gatch, Boothby, and Cotton; that is to say, rebreathing, reduction of the pressure, and a sight-feed. The apparatus weighs 16½ pounds, while retaining the essential features of the Boothby and Cotton apparatus, which weighs 40 pounds. With two nitrous-oxide tanks and one oxygen tank in place (enough for a two-hour administration), the total weight is about 42 pounds, not too much for one man to carry a short distance, or to shift without assistance from one place to another. In hospitals where the supply is obtained from large tanks or from a generator in the cellar, the delivery hose from these sources may be attached to the apparatus. If an operation is of less than 30 minutes' duration, enough gas can be carried in three small containers, making the total weight of the apparatus, cylinders, and gas less than 20 pounds.

The valve for the nitrous oxide reduces the pressure from 1000 pounds to the square inch to 10

pounds. The oxygen is controlled by a small valve invented by the instrument-maker, J. Langsdorf. A mercurial manometer, which automatically blows off at 25 mm. mercury pressure, is attached for endotracheal work.

After the gases have been lowered in pressure they pass into a combination sight-feed and warm water bath, where the administrator can see on one side of a nickel partition the nitrous oxide flowing, and on the other the oxygen. The anæsthetist is thus enabled to regulate the proportions of the gases to the finest possible point. This water sight-feed is warmed by an alcohol lamp adjustable to its under surface, thus supplying heat and moisture, which are valuable assets in the administration of an anæsthetic. From the sight-feed the mixed gases pass at the top to an exit tube, to which is attached the rubber tube connecting the rubber bag and mask. The gas cylinders are opened wide into the reducing valves, the flow from these valves being controlled by very sensitive wheels.

The apparatus was especially devised for endotracheal work. When thus used a connection is made with the tube in the trachea, no bag being necessary. The constant flow of the gases insures an even anæsthesia without danger.

The apparatus is also used for nasal anæsthesia and analgetic work. It has been thoroughly tested and found amply sufficient for all surgical cases.

**Coburn: Safety and Science in Nitrous Oxide Administration.** *Med. Rec.*, 1912, lxxxii, 798.

By Surg., Gynec. & Obst.

Coburn presents this as a companion to his article on "Ether Administration." He believes rebreathing nitrous oxide is scientific and adds an element of safety to this form of anæsthesia. In his opinion, surgical shock, as to cause and prevention, aside from hæmorrhage is chiefly anæsthetic, local or general. In abdominal operations, with the peritoneum open, the patient will tolerate double the amount of rebreathed air that the same patient would breathe with the peritoneum closed. This is due to the fact that carbon dioxide, being a diffusible gas, rapidly transpires through the capillaries into the air whenever there is considerable exposure of these vessels. He condemns elaborate apparatus, pressure-reducing valves, and percentage gauges, on the ground that they are unnecessary and unscientific. The amount of oxygen used is simply to maintain the proper degree of oxygenation; the indications for its use are clear, and the amount used is always "q.s.," just as with any other anæsthetic.

He finally says that the essentials for anæsthesia are: preliminary hypodermic of morphin and atropin; pliable control of rebreathing and of oxygen throughout the administration; blood always well oxygenated; rebreathing bag close to the patient's face; sterilization of all parts contaminated by breathing; and small amounts of ether as an adjuvant anæsthetic whenever indicated, or infiltration of the field with a local anæsthetic. Pressure-



reducing valves and percentage gauges are unnecessary. Constant flow of gases prevents pliable control of rebreathing. Continuous positive pressure is harmful.

L. G. DWAN.

**Allen: Spinal Anæsthesia.** *J. Am. M. Ass.*, 1912, lix, 1841.  
By Surg., Gynec. & Obst.

Allen has reported 242 cases, with but 15 partial or complete failures and no deaths. He now reports an additional 33 of his own, with no failures and no untoward effects during operation. He advises surgeons to visit Bier's clinic in Berlin for a course in local and spinal anæsthesia, and not to condemn this method as "unreliable, dangerous and no good anyway" because of insufficient experience in its application. In cases in which shocks and sepsis have to be dealt with, this method is often life saving. It absolutely blocks transmission of impulses from the periphery to the brain, and this eliminates shock. Failures are always due to errors in technique—letting the point of the trochar slip out of the spinal canal at the time of adjusting the syringe for injection. He invariably uses a 5 per cent tropacocain hydrochloride solution with epinephrin, prepared with Dönitz' formula. It is important

not to allow patients to come to operation starved and faint. It is not possible for anyone to see a considerable number of cases and not be convinced that spinal anæsthesia has a future equal to that of gasoxygen anæsthesia, if not greater.

L. G. DWAN.

**Bainbridge: Spinal Analgesia.** *J. Am. M. Ass.*, 1912, lix, 1855.  
By Surg., Gynec. & Obst.

Bainbridge uses stovain or tropacocain because fewer unpleasant symptoms are apt to ensue, but does not hesitate to employ cocain. The indications for spinal analgesia are the contraindications for inhalation anæsthesia. A number of surgeons of wide experience accept practically no limitations to its use. The real objections to spinal analgesia are: (1) The operator is absolutely committed to the dose. It can be increased, but not decreased, when once given. With changes in position of the patient and carefully graded dosage, control can be exercised. (2) Analgesic effect may pass before the surgical procedure is finished. Even the most enthusiastic adherents would not advocate the usual employment of spinal analgesia by the surgical novice.

L. G. DWAN.

## SURGERY OF THE HEAD AND NECK

### HEAD

**Homans: The Surgical Treatment of Head Injuries Affecting the Brain.** *Boston M. & S. J.*, 1912, clxvii, 684.  
By Surg., Gynec. & Obst.

Skull fractures may be divided roughly into two classes: indented and bursting fractures. The former cause laceration of the brain and often introduce sepsis. The author briefly describes the treatment of these injuries. Bursting fractures are produced by a blow which causes the sides of the skull, equatorial to the point of impact, to spring and crack. The location of the fracture, unless it ruptures a meningeal vessel, is comparatively unimportant, but most cracks pass through the temporal fossa and rupture the ear drum.

Bursting fractures cause local or general œdema and often laceration of the brain surface and pial hæmorrhage. Symptoms are due to œdema of the brain, hæmorrhage in the meninges, and medullary depression. As treatment is to be directed to the relief of increased intracranial pressure, the principal diagnostic signs to be observed are deepening unconsciousness and the appearance of bloody fluid (from pial hæmorrhage) on lumbar puncture. Extradural hæmorrhage usually presents a classic picture, but except as identifying this condition, the external signs localizing the injury to one side of the brain are deceptive. The value of these and other signs is discussed.

Operative treatment is indicated if, after a varying period of observation, there is evidence of cere-

bral œdema and laceration, and the patient's condition does not improve or shows signs of increased intracranial tension and medullary failure. Subtemporal decompression answers the demands of surgery, for (1) it takes the operator to the most common seat of hæmorrhage, and (2) it allows drainage and relief of tension over a silent area of the brain. When operation is not called for, absolute and prolonged rest is essential.

The author describes a number of illustrative cases. His experience leads him to believe that in suitable cases, decompression, by checking and draining hæmorrhage, and by tiding the brain over a period of pressure, not only saves life but shortens convalescence and favors completeness of recovery.

**Auerbach and Grossmann: Case of Bilateral Cysts of the Cerebellum Successfully Operated on** (Ueber einen Fall von doppelseitigen mit Erfolg operierten Kleinhirncysten). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 455.  
By Surg., Gynec. & Obst.

The authors give the detailed history of a case of bilateral cyst of the cerebellum. When the patient was 16 years old, a cyst occupying almost the entire posterior left hemisphere of the cerebellum was extirpated. Following this for 4½ years he was practically well, when symptoms appeared which seemed to indicate that there was now a cyst in the right hemisphere. However, it was possible either that the right hemisphere of the cerebellum was being drawn by cicatricial traction to the left side,



or that a small tumor to which the extirpated cyst had belonged had now grown into the right side.

Two punctures of the right lateral ventricle, performed at intervals of 20 days and resulting in the removal of large quantities of fluid, had only momentary subjective results; and when vomiting, pallor, and slowing of the pulse set in, it was decided to open the right cerebellum. After perforation of the skull, amber fluid spurted out and the respiration improved immediately. A piece of the skull the size of a silver dollar was resected. The wall of the collapsed and perforated cyst was very thin and could only be partly removed, so that a tampon was made and the operation uneventfully finished. The patient improved rapidly, but had considerable pain in the right eye when the tampon was replaced by a drain. This pain stopped, however, when the drain was shortened.

E. S. TALBOT, JR.

**Taylor: Neurological Aspects of Injuries to the Cranium and Spinal Column.** *Boston M. & S. J.*, 1912, clxvii; 675. By Surg., Gynec. & Obst.

Dr. E. W. Taylor draws the following conclusions from a study of head injuries: The outcome of a blow on the head is not to be estimated by the extent of manifest brain injury. Fracture of the skull is not in itself of grave import. Focal symptoms indicating laceration are not necessarily serious complications; unless the damage to the brain be extensive such focal symptoms are apt to improve or wholly disappear. The possibility, however, of late epilepsy and more or less permanent mental symptoms or neurotic states should always be considered. Immediate prognosis is to be determined largely by the condition of consciousness — if the patient holds his own or improves in this regard, the outcome is in general favorable; if the coma deepens, the prognosis must be considered grave. Rest is the first essential of treatment;

surgical intervention should be practiced with conservatism.

A study of the clinical disturbances and pathological findings in traumatism of the cord leads to the following general conclusions: Hemorrhage external to the cord is unusual, and need not be seriously considered in deciding upon operation. Concussion of the cord without definite microscopic lesions is a possibility. Damage to the cord is immediate following the injury. Nothing, therefore, is to be gained in the majority of cases by immediate operation. Surgical interference should in general be delayed until the immediate shock of the injury has abated. Operation in any event is unavailing when signs of complete transverse lesion persist. Laminectomy may help in selected cases toward restoration of the functions of a partially damaged cord.

**Pichler and Oser: Immediate Prosthesis Following Resection of the Mandible** (*Mittelbar Prothesen nach Unterkieferresektion*). *Arch. f. klin. Chir.*, 1912, xcix, No. 4. By Surg., Gynec. & Obst.

This article is a continuation of the one published in volume 84 of this series.

In order to avoid the serious complications following resection of the lower jaw, either of the following methods may be resorted to: 1. The wound may be allowed to heal and cicatricial tissue to form. 2. Prosthesis may immediately follow the operation, the temporary splint being removed after cicatrix is completely formed and the permanent splint substituted. 3. Implantation prosthesis may be done. 4. The defect may be filled by means of a plastic operation.



Fig. 2. Immediate prosthesis made of vulcanite, with a system of canals which can be irrigated by means of a tube. The six openings for the use of irrigating fluid are located at the joint and on the convex part of the prosthesis, and therefore are not visible in the picture. The jointed prosthesis, fastened with a hook, rests upon a model of the teeth made previous to the operation. The above illustration shows the jointed splint opened. The connection between the jointed splint and the real prosthesis can be made by means of a screw adjusted to the necessary width. (Pichler and Oser.)

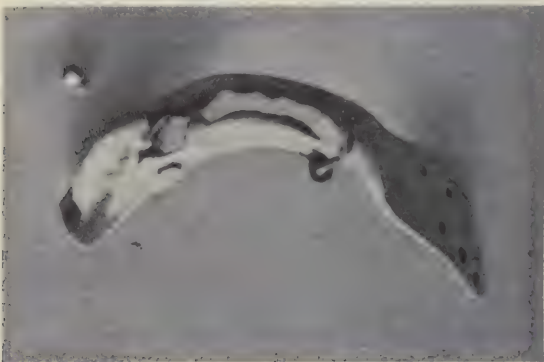


Fig. 1. Case 9. Jointed splint made of silver. The fixed labial part has a small inclined plane on the left side, and on the right side the perforated arm connects with the immediate prosthesis of the jaw. The lingual movable part can be pressed against the labial part and held there by means of a screw, so that the teeth are held absolutely firm. (Pichler and Oser.)



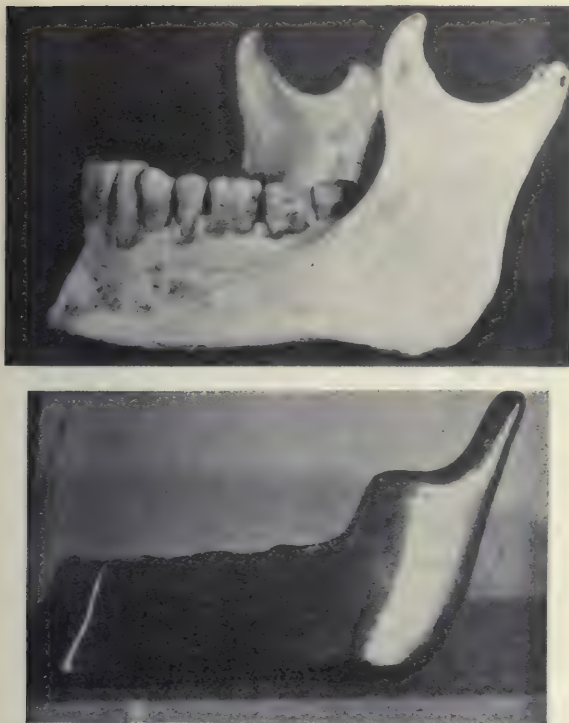


Fig. 3. Immediate prosthesis made of vulcanite and of the best design in accordance with our experience. Above the splint is shown the jaw from which the splint is modeled. This design differs from that of others principally in its greater width, particularly in the ascending branch, and in the stamped shoulder whereby it rests against the thin joint end. (Pichler and Oser.)

The first procedure has the great disadvantage that the patient is exposed to considerable discomfort, and to great loss of time. It is therefore seldom used. The second method is the subject of this paper. The third is of little value; most of the cases with implantation prosthesis heal imperfectly and leave a fistula. The last method is the ideal one. Here either a skin-muscle-bone flap or a skin-bone flap is used. Rydygier obtained excellent results in a case of mandible defect by transplanting a skin-bone flap from the clavicle.

The author gives 11 case histories accompanied by photographic illustrations. He recommends a hinge splint (Scharnierschiene) made of silver and vulcanite and provided with a clasp for the teeth. The use of this splint safeguards the bone from injury, especially if it can be fastened to the teeth on the sound portion of the mandible. The change from the temporary to the permanent prosthesis offers no difficulty. The difference between the two is that the permanent fixture is supplied with artificial teeth. The time for changing one to the other is easily determined; in the present series of cases it took from two to three weeks. The use of the hinge

splint prevents bone necrosis and chronic suppurations, complications so often present with the use of prosthetic appliances that have to be sutured to soft parts and fastened with screws. It is best to have the permanent prosthetic appliances made in duplicate, so that the necessary changes may be made without delay.

E. S. TALBOT, JR.

**Abadie: Osseous Graft after Resection of the Inferior Maxillary** (De la greffe osseuse après résection du maxillaire inférieur; à l'occasion de deux cas d'adamantinome kystique). *Rev. d'Orthop.*, 1912, Nov.  
By Journal de Chirurgie.

Abadie reports two cases of cystic adamantinoma of the inferior maxillary bone. In one of these cases a partial resection of the maxilla was performed without interruption of the mandibular arch. The intervention was economic and proved sufficient. This case is interesting only from its anatomical characteristics. It is a new formation of multiple cystic cavities containing no normal or abnormal teeth. It contained, however, a well-developed supplementary tooth presenting the characteristics of an adamantine origin. This was confirmed by the presence of enamel dust and of a pseudo tooth. Abadie designates this tumor by the name of polycystic adamantinoma of paradental origin. This term is expressive of the histologic structure, macroscopic aspect, and histogenesis.

One of the cases is very interesting. Having to operate upon a multilocular cystic adamantinoma of the inferior maxillary bone, Abadie resected the corresponding half of the maxilla, which was involved in its whole thickness, and transplanted immediately the second rib in the bed left free by the ablation of the mandibular arch. He lodged the small extremity of this rib in the temporo-maxillary articulation. At the end of two months and a half the graft, which had become infected and had determined suppuration, was eliminated. He asks himself whether it is preferable in a case of this nature to transplant immediately or to wait and transplant later. A safe conclusion can be reached only by a careful study of the experience of many operators. It is essential that scrupulous care be taken to avoid soiling, during the course of operations, the operative field by the buccal secretions, and to carefully suture the buccal mucosa before placing the rib in its new bed.

ALBERT MONCHIT.

**Frazier: Intracranial Division of the Auditory Nerve for Persistent Aural Vertigo.** *Surg., Gynec. & Obst.*, 1912, xv, 524.

By Surg., Gynec. & Obst.

Division of the auditory nerve for persistent aural vertigo is a comparatively new procedure, there being no case on record until the operation performed by Dr. Frazier in 1908. While the vertigo was only partially relieved by the operation, he urges, from his experience with this and other operations in the posterior fossa, that this procedure



be resorted to more frequently for the relief of persistent and intractable forms of aural tinnitus and vertigo. Great care should be taken, however, in the selection of cases, as those cases of tinnitus or vertigo of central origin should be excluded, and those in which the disease is of labyrinthine origin considered most appropriate. The patient, a woman of 64, had a history of nasal catarrh, and nine years prior to the operation an attack of influenza, after which she became a constant sufferer from vertigo, mostly on the left side, so that she gladly consented to operative intervention. The incision was made as for a unilateral suboccipital craniectomy, the musculo-cutaneous flap reflected and the bone removed to expose the left cerebellar hemisphere, the dural flap turned back, and the auditory nerve exposed by following the direction of the petrous bone. The most delicate part of the operation then followed, namely the identification and division of the auditory nerve. The hemisphere was retracted and the eighth nerve most carefully separated from the facial, and what remained of the former divided, the latter being identified by the use of a galvanic current, great care being taken all the while not to injure in any way the facial nerve.

The author has found that hæmorrhage from the scalp may be readily controlled in these operations in the posterior fossa by introducing a continuous overlapping silk suture one half inch above the line of incision. He advocates very strongly the use of the intratracheal method of anæsthesia not only as a matter of convenience to the operator, but because it is a factor in minimizing the risks of the operation, first, by controlling venous hæmorrhage, and second, by counteracting any obstacles that may be offered to the respiratory function when the patient is in the face down position.

**Tooth: Some Observations on the Growth and Survival Period of Intracranial Tumors, Based on the Records of 500 Cases, with Special Reference to the Pathology of the Gliomata.** *Proc. Roy. Soc. M., 1912, vi, 1.*

By Surg., Gynec. & Obst.

This is a most exhaustive article on the subject, and it happens that a great deal of it can best be given in the tables of the author.

TABLE I

	Region	Sex		Total
		M.	F.	
1.	Frontal.....	60	40	100
2.	Central pre- and post-parietal.....	43	20	63
3.	Temporo-sphenoidal.....	24	25	49
4.	Occipital.....	8	6	14
5.	Corona radiata, corpus callosum, etc....	4	6	10
6.	Lateral ventricle.....	3	1	4
7.	Pituitary.....	10	4	14
8.	Optic thalamus.....	4	3	7
9.	Mesencephalon.....	18	8	26
10.	Pineal.....	4	..	4
11.	Choroid plexus; III and IV ventricles....	4	1	5
12.	Cerebellum.....	44	33	77
13.	Extracerebellar.....	10	21	31
14.	Pons.....	19	24	43
15.	Medulla.....	..	2	2
16.	Base.....	1	3	4
Total.....		264	105	450
17.	Not localized.....	24	17	41
Grand total.....		288	122	500
Forebrain: 239, or 52 per cent; midbrain: 30, or 6.5 per cent; cerebellum and pons: 160, or 34.2 per cent.				

Of the group shown as not localized, many are unquestionably located in the frontal and temporo-sphenoidal regions.

In regard to the age the author sums up as follows: Tumors of the forebrain tend to appear more frequently in middle age, but no age is exempt. Those of the midbrain, on the other hand, are most predominant in the early or adolescent period, and the same may be said of tumors of the cerebellum and pons. Comparatively few occur here after 30.

As to the variety of the tumor, gliomata comprised 127, or 49.2 per cent; fibrogliomata, 15; fibroma 13; endothelioma 37; sarcoma 21; carcinoma 15; tuberculoma 14; simple cyst 5; papilloma 3; cholesteatoma 2; pituitary 2; pineal gland 4.

Cancerous heredity was present in 37 cases, or 7.2 per cent. In no case was there any history of a brain tumor. Gliomata were well distributed throughout the brain, comprising 58.7 per cent of all the growths in the forebrain, 50 per cent of those in the midbrain, and 38.4 per cent of those in the cerebellum and pons. Fibrogliomata and fibromata were peculiar to the cerebellum, pons and medulla; endotheliomata occur only in the anterior fossa of the skull. Sarcoma occurs in any portion of the brain. Of the 21 cases, 6 were undoubted round or spindle-celled sarcomata and were secondary; the remainder of the cases were primary.

Of the 15 carcinomata, only one was unquestionably primary. Primary tumors in 7 secondary cases were located; 3 times in the mammary gland, and one each in the ovary, suprarenal, pancreas and rectum.

The reason for the small number of tuberculomata in this series is that very few children are included in the series.

Simple cyst is a rare condition; many gliomata, however, show cystic degeneration. Papilloma is a rare condition. There were probably 14 cases of pituitary tumor, but only 4 were verified by operation, and of these 3 died and one survived as long as 3½ years; 2 of the 3 which died lived for six months. The pineal gland tumor was not diagnosed as such.

As to the survival period of tumors from the appearance of the first symptom to death: gliomata, six weeks to nine years, an average of 16.2 months; if we exclude unusual cases the average goes down to 10.1 months, which is probably more nearly correct. The survival period for the frontal region is longest; the temporo-sphenoidal region comes next. Endotheliomata survived anywhere from 6 months to 20 years. The average of the 5 sarcomata was 11.2 months; of the carcinomata, 10.1 months; of the 7 tuberculomata which came to operation, the average survival was 21.5 months. Very little can be said about the other forms.

Tooth then takes up the subject of the glioma from the histological standpoint. The first thing to be noted is that there is a very great variation between different sections of the same tumor. The histological features to be noted are:

"1. A fine, loose-meshed glia reticulum.



"2. Delicately stained, barely visible glia-cells, with three or more branching processes, which divide into a fine reticulum which forms the stroma or connective tissue basis of the tumor. To show these elements, a counter-stain, such as Van Gieson's, is necessary.

"3. Scattered over the section in not excessive numbers are the glia nuclei, always deeply stained by hæmatoxylin. I call these 'glia nuclei' to distinguish them from the more histologically definite 'glia cells.' Possibly they also are cells with an invisible cytoplasm. The term is provisional only. They should be fairly uniform as to size, and not grouped; but even in this apparently innocent quiescent picture these cells tend to show an arrangement in circles or segments of circles, a feature to be referred to later when considering the more malignant types.

"4. The blood-vessels are few and their walls lined internally by a single layer of flattened endothelial cells."

Cyst formation is very common in gliomata. The first point to be determined is as to what constitutes malignancy and on what changes malignancy rests. The arrangement of the nuclei into circles or even lines is an indication of the awakening of proliferative activity. As to the glia cells, alteration from normal consists in enlargement and increase in number, multiplication of the nuclei, and the disappearance of the original cell and independent existence of the nuclei.

As to the rôle which the blood-vessels play, it is difficult to determine. These tumors are very vascular and the blood-vessels are lined by an endothelial lining. Usually the larger vessels present the appearance of an arteriole, but sometimes in the angiomatous forms there is seen a thickening and condensation of the glia tissue about the large vessels. Necrosis goes on hand in hand with increased growth. It is not too much to say that the more evidence existing in a given tumor of active growth, the more certainly will be found parts in which necrosis is in progress.

The glioma shows a tendency to cyst formation more than any other group. These cysts are sometimes single, but more often are multiple. They may be drained with temporary or even prolonged benefit. The cyst begins as a rarefaction of the gliomata, and is an evidence of long life and a process of atrophy rather than of activity.

In concluding, Tooth remarks that in the present state of our knowledge we must be content with relieving pressure by decompression on all gliomata.

C. G. GRULEE.

## NECK

**Chiari: Tumor of the Carotid Gland** *Beitr. z. klin. Chir.*, 1912, lxxi, Nov. By Surg., Gynec. & Obst.

The patient, a man of 37 years, gave a history of the development during the preceding three and one half years of a small painless tumor on the left lateral aspect of his neck. During the last few months this

tumor had shown marked increase in size. Examination showed a tumor the size of a pigeon's egg, hard, smooth and only slightly movable on deep palpation. Its site corresponded with the bifurcation of the common carotid. At operation the tumor was found to lie between the internal and external carotid arteries. The branches and trunk of the external carotid were ligated and a temporary ligature was passed around the common carotid and left in place, while the tumor was dissected from the wall of the internal carotid, which was not injured. Operative healing followed. Microscopic examination of the tumor showed a connective tissue stroma separating alveolæ which contained collagenic epithelioid cells. A few mitotic figures were observed. Chiari does not come to any conclusions as to the nature of these cells. They might represent an undifferentiated stage in cell division, or they might be the embryonic cells which are found in the sympathetic system.

M. C. PINCOFFS.

**Hazelhurst: Subluxation of the Major Cornu of the Hyoid Bone (Dysphagia Valsalviana).** *Bull. Johns Hopkins Hosp.*, 1912, xxiii, 344.

By Surg., Gynec. & Obst.

The rarity of subluxation of the major cornu of the hyoid bone, or the infrequent diagnosis of this condition, explains why so few cases have been reported. The author's attention was attracted to this fact when he was trying to discover cases with symptoms similar to those of a patient who presented himself for diagnosis in the Laryngological Dispensary of the Johns Hopkins Hospital.

The patient, Dr. McC — of Texas, stated that in 1887, when a child of seven years, he suddenly became unable to swallow. He was taken by his father to a physician, who tried in vain to get something into place in his neck which had apparently become twisted. The longer the condition persisted, the more painful were his efforts to swallow. After two days, during which time the child remained with the physician, there was a sudden restoration of the normal condition. Repeatedly after this he had had similar attacks, in which swallowing became at first painful and then impossible. They would come on when he yawned or turned his head suddenly. Sometimes the condition would be relieved of itself, as in the first attack, and sometimes he was able to obtain relief by pulling hard on the skin in front of the sternomastoid muscle. At the age of 23 he learned to "set it," as he expressed it. He inserts his index finger into his mouth at the side and base of the tongue, at a point which corresponds, when one feels on the outside, to the attachment of the major cornu of the hyoid bone to the superior cornu of the thyroid cartilage, and presses outward and forward. Something goes back into position with a distinct click. These points were determined on examination during the time in which the abnormal condition was present. As far as could be determined by a laryngoscope there was no change in the larynx.



A study of the anatomical relations of the hyoid bone and of the symptomatology of 11 cases of subluxation of the major cornu of the hyoid bone, including the author's case and ten cases collected from the literature, makes it seem probable that in this case there was a loose articulation of the major cornu with the body of the hyoid bone, or a loose attachment of the tip of the major cornu to the superior horn of the thyroid, allowing greater freedom of movement of the major cornu than is normally present.

Aside from the author's case he gives histories in brief of 11 cases which have been reported, and he observes that, while the symptoms vary somewhat in severity, the resemblance between the cases is so striking that the assumption seems warranted that the underlying cause is the same in each case. There is most probably a dislocation of varying degrees of the major cornu of the hyoid bone in an outward or inward and downward direction. Either type may occur as the result of trauma or of sudden movements of the head, neck, or jaws. In the latter case, it seems likely that there exists a loosened condition of the attachment of the tip of the greater cornu of the hyoid bone to the superior horn of the thyroid cartilage, and perhaps looseness of the articulation of the cornu with the body of the hyoid, allowing freer play of the tip.

Subjectively, the patients experienced pain in swallowing (six cases), total inability to swallow (two cases), marked anxiety (four cases), and a feeling as though a foreign body were blocking the œsophagus (three cases). In every case there was immediate and marked relief on reduction of the dislocation. Four cases came on during sudden movements of the neck and jaws (yawning, coughing, singing, etc.) and four as the result of direct trauma from without by choking, or from within through the ingestion of a large solid particle.

G. E. BEILBY.

**Schlesinger: Acute Exophthalmic Goitre.** *Therap. Gegenwart, Berl.*, 1912, liii, 488.

By Surg., Gynec. & Obst.

Schlesinger draws attention to the symptoms-complex of acute Graves' disease which so often is diagnosed as occult neoplasm. Its most striking characteristic is rapid emaciation—loss of 20 pounds or more in a month is not infrequent. One patient lost two thirds of his weight in 11 weeks. Neoplasms show such a rapid loss only when ingestion of fluid or food is restricted mechanically. Splenic tumor, at times of considerable size, is quite common. It is an early symptom, absent only in a few cases. Fever is more frequent in the acute than chronic forms of the disease. The type varies. The thyroid gland is often not enlarged, indeed it impresses one at times as if diminished in size. A vascular bruit always can be heard over the gland; it is soft, with rhythmical, systolic accentuations. It is of eminent diagnostic importance. Eye symptoms often are indistinct. Exophthalmos may be absent or slight. Stellwag's symptom was present often and early in his cases. Tachycardia was al-

ways found. The arterial symptoms tally in many points with those found in aortic insufficiency. Blood findings are identical with those of the chronic state. Leukopenia, with relative lymphocytosis, is the picture represented. If associated with fever and splenic tumor, typhoid fever may be simulated. The gastro-intestinal disturbances coincide with those present in the chronic form. Schlesinger has observed intense icterus in three of his cases. Glycosuria existed several times. Resistance in these patients is very low. A slight infection may cause death in a short time. Status hypoplasticus has been a frequent finding at autopsy. Schlesinger thinks that the disease takes an acute course in hypoplastic individuals. Acute Graves' disease is a *noli me tangere* to the surgeon, at least as long as the acute symptoms predominate. It should be our aim to transform the acute into the chronic state. Schlesinger suggests the following treatment: Absolute rest in bed with plenty of fresh air; forced feeding with albumen and fat; antithyroidin (Morbis), 3 tablets daily, or 15 to 20 drops of the liquid three times daily combined with intramuscular cacodyl injections (0.02 to 0.05 daily). After 20 injections a pause is made. X-ray treatment is employed in every case, despite the objections of Eiselsberg that this form of treatment stimulates connective tissue formation about the gland so excessively that it increases difficulties during operative interference markedly. Phosphate of sodium (Kocher) has been used; but Schlesinger is not convinced of its efficacy. Galvanization of the neck and hydrotherapy are recommended. Residence in high altitudes (1000 to 1500 metres) is of great benefit. E. C. RIEBEL.

**Farrant: Thyroid Action and Reaction with Special Reference to the Formation of Thyroid Tumors.** *Proc. Roy. Soc. M.*, 1912, vi, 21.

By Surg., Gynec. & Obst.

In clinical toxæmias the colloid of the thyroid first becomes finely granular; then vacuolated and partly absorbed; then the cells become more numerous, elongated, approaching the columnar type and arranged in masses. The colloid then is entirely absorbed, and the infolding and cell increase go on to transform the vesicles into solid masses. This is shown by examination of the thyroids from cases of infantile diarrhœa, diphtheria, measles with broncho-pneumonia, and whooping cough with broncho-pneumonia. In order to test this out experimentally, the following investigations were undertaken:

First, guinea pigs were tested by the injection of diphtheria toxin, and it was shown that some changes were produced in the guinea pig. If diphtheria toxin produced thyroid changes, it was thought likely that by the use of thyroid extract some changes in the clinical course might be produced, and those guinea pigs receiving thyroid extract lived longer than those without. The serum of the thyroid-fed animals was found to be antitoxic, and diphtheria antitoxin was found to contain more thyroid secretion than normal serum.



He summarizes these findings as follows: (1) The thyroid undergoes hyperplasia in certain diseases. This hyperplasia resembles that following partial thyroidectomy. A similar hyperplasia is induced in guinea pigs by the injection of diphtheria toxin, and is mitigated if thyroid administration be combined with the diphtheria toxin. These guinea pigs also survive longer than the controls. (2) The blood serum of a thyroid-fed rabbit is antitoxic to diphtheria toxin. (3) Antitoxin fed to normal rabbits produces symptoms similar to those arising from feeding thyroid, while in thyroidectomized rabbits antitoxin is borne without symptoms. (4) Diphtheria antitoxin contains iodine in organic combination; normal horse serum contains but the slightest trace. This indicates some close relationship between the thyroid function and the development of certain antitoxins. It may be suggested that the hyperplasia observed in these toxæmias arises from the attempt to form antitoxin.

In the formation of thyroid tumors, the toxins that produce thyroid hyperplasia must be either exogenous or endogenous, and the earlier stages of hyperplasia would not produce a larger thyroid but rather a diminution in size of the colloid material. Following this there would be renewed production of colloid, which would result in the formation of the so-called adenoma, or the involution may go on to fibrosis. In other words, the changes may be summed up as follows: Hyperplasia without thyroid enlargement; hyperplasia with various degrees of enlargement; adenomata of involution; cysts and cystadenomata of degeneration.

As to thyroid tumors in cretins, 75 per cent of cretins have enlarged thyroids. There are two facts which account for this: (1) The toxins circulating in the blood of the foetus will be relatively large in amount, as it will correspond to the toxicity of the mother's blood. (2) The thyroid of the normal foetus is always in a condition corresponding to hyperplasia.

C. G. GRULEE.

**Fuller: Exophthalmic Goitre.** *Surg., Gynec. & Obst.*, 1912, xv, 585.

By *Surg., Gynec. & Obst.*

This report makes a creditable showing as to the surgical and non-surgical treatment of Graves' disease. When subjected to one or more of the operative procedures now employed in the treatment of this affection, fully 85 per cent of the cases are cured, both as to thyrotoxicosis and secondary changes in other organs.

Emphasis is laid on the benefit to be derived from medical measures, especially when instituted early and followed persistently, and individual reports are not lacking to show that cures in some of the severest types of Graves' disease have thus been permanent and lasting. Without the therapeutic aids which are included under the heading "Medical Treatment," the percentage of cures claimed for surgical treatment would call for some modification; for it is here in the few weeks or months of the post-operative history that proper environment

and all-around general management mean so much, and afford undisputed evidence of its value.

The class of cases in Graves' disease calling for surgical treatment exhibits a great difference in degree and severity, necessitating some experience and judgment in the proper selection of the most appropriate therapeutic measure. Any procedure which may exceed the limits of safety as to time or extent of the operation is a question too important to be ignored.

The possibility of such an error is not difficult to understand if the fact is recalled that simple pole ligation will limit the function of the thyroid gland in one instance equal to the ablation of a major portion of the thyroid in another instance.

It is quite generally recognized that the more minor procedures, as ligation of one or more of the thyroid arteries, should, as a preliminary step, be the operation of choice, because the mild cases call for no more than this to effect a cure, and the more severe cases are so greatly benefited thereby that subsequent surgery of the thyroid gland is employed without hazard or risk.

The report argues against the somewhat indiscriminate removal of all forms of thyroid enlargement without thyroid intoxication, on the assumption that these are cases of early Graves' disease. It is but fair, however, to accord to this hypothesis some weight, as the histologic picture of Graves' disease and that of colloid goitre are in many particulars identical.

When formulating and executing plans for surgical operations in Graves' disease, the myxoedematous or third stage of this affection cannot be eliminated from consideration. Athyroidism or decreased activity of the thyroid gland may follow any one of the operations now in vogue for the cure of an overactive thyroid gland, and is not infrequently seen in cases not treated at all by surgical means.

**Camera: Primary Tuberculosis of the Thyroid Gland** (*La tuberculose primitive de la glande thyroïde*). *La Clin. Chir.*, 1912, xx, Oct.

By *Journal de Chirurgie*.

Primary tuberculosis of the thyroid gland is uncommon. The author reports one case. A female, 51 years of age, had indefinite general symptoms of sufficient severity to confine her to bed for five weeks. During that period she complained of cervical constriction and of a persistent dry cough. A tumor was present in the median line below the thyroid cartilage. At the end of five months the tumor had reached the size of a hen's egg, and continued to increase in size, causing acute inspiratory disturbances. The patient looked bad; emaciation was marked; complexion, as well as mucosa, was pale. The cervical tumor was fist-sized and extended from the hyoid bone to the sternal notch; laterally, it was bounded by the sterno-cleido-mastoid muscles. It was hard in consistency, and was adherent to the laryngo-tracheal tube.

The rapid development of the tumor, the intensity



of the respiratory disturbances, and the advanced cachexia led the author to diagnose cancer of the thyroid gland. Extirpation of the mass adherent to the trachea was difficult. Shortly after operation the patient died. The autopsy showed no trace of tuberculosis in other parts of the body. The right lobe of the thyroid was normal, the first rings of the laryngo-tracheal canal were destroyed. The anatomical findings were such that the author regards this case as one of absolutely demonstrated primary tuberculosis of the thyroid gland. In all the cases previously reported, the diagnosis, except in one instance, was not made during life. In this one it was made through an exploratory puncture of a cold abscess. These patients were all subjected to operation with the idea that they were suffering from malignant tumor of the thyroid. These two conditions give similar symptoms. Cancer of the thyroid is frequent, but tuberculosis of the thyroid is extremely rare. For the differential diagnosis, the author attaches great importance to the absence of pain in the thyroid gland in tuberculosis, however rapid be the development of the disease or however marked the swelling. In cancer, however, the pain is intense and radiating.

Among other conclusions, he states that in the presence of a swelling in the thyroid gland giving the clinical physiognomy of a malignant neoplasm, one should think of chronic inflammation and should resort, before operating, to all known methods of investigation; if necessary, culture experiments should be made. From the prognostic standpoint and from the standpoint of operative indications, the importance of a precise diagnosis is great. Tuberculosis can heal spontaneously or with the aid of a limited operation, such as incision or enucleation of the inflammatory focus.

PIERRE FUDET.

**Shepherd: Tetany Following Extirpation of the Thyroid.** *Ann. Surg., Phila., 1912, lxvi, 665.*

By Surg., Gynec. & Obst.

After giving a short résumé of the history of the parathyroids and their relation to tetany, Shepherd says there are two theories of the functions of the parathyroids; first, that an antitoxin is developed

by them which neutralizes certain waste products of tissue metabolism (Berkeley), so that when the parathyroids are destroyed a toxic material is formed in the blood which causes tetany; second, that the calcium metabolism of the cells of the body is controlled by the parathyroids, and that their removal causes a rapid disappearance of the soluble salts of calcium from the blood.

There is considerable evidence to support both theories; but the idea, advanced by the earlier observers, that the parathyroids are really embryonic remnants or portions of foetal thyroid has almost been given up, most workers admitting that they are organs of vital importance to the economy.

In taking up the treatment of tetany, Shepherd first tells of a successful case of autotransplantation of a parathyroid in a case of tetany following thyroidectomy, reported by Brown of Australia, and then goes on to detail a most interesting and instructive case of his own. The patient, a woman of 34, developed tetany three days after a difficult thyroidectomy. Calcium lactate relieved every attack promptly, but only temporarily, thus agreeing with the conclusions of Voegtlin and McCallum, that calcium can cure temporarily any case of tetany due to insufficiency of the parathyroids. The dried extract of parathyroid failed to help the patient, and she was compelled to continue taking calcium after leaving the hospital. Seen five months after operation the patient was well and had gained 20 pounds, but she had to take 20 grains of calcium lactate twice a day, having gradually reduced the amount from one dram every three hours.

The author says that in this case, although no parathyroids were found in the removed thyroid, still there must have been some injury to these glands, due perhaps to the after-hæmorrhage and distention of the cavity with blood clot after the operation. He was of the impression that perhaps in time the damaged parathyroids might resume their functions, for Eiselsberg and Kummer report cases of recovery after one year. If recovery does not take place within that time the author intends to get human parathyroids, if possible, for transplantation.

B. M. BERNHEIM.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Brown: Operative Treatment for Cancer of the Breast.** *N. Y. M. J., 1912, xcvi, 940.*

By Surg., Gynec. & Obst.

The following record of 137 cases of cancer of the breast suggests some practical conclusions. Thirty per cent of these cases gave a history of trauma. One hundred and thirty-one were operated upon, and in all but 10 cases a radical operation was performed.

The post-operative histories of 85 cases have been traced, as follows: Recurrence (or metastasis), in 6 cases within a year; in 46 cases within two years; in 22 cases within three years; and in 10 cases within five years. There was a single patient alive after 15 years.

Many of these cases were operated upon early in the disease — one on the day the tumor was discovered. But macroscopical and microscopical examinations in all cases seem to prove that so-called "early" cases are really well advanced. The author



believes that the fact that some persons succumb quickly to small cancers, while others live for years with large ones, is due to a difference in the resistance of patients, not to a difference in the virulence of the disease. He suspects the neurones of playing a part in the etiology of cancer.

He believes that: (1) Any breast operation to be radical must sacrifice the pectorales, major and minor, but in some cases the upper clavicular portion of the pectoralis major may be left, thus getting better arm function. (2) If attempting a radical operation, all connecting lymphatic chains should be removed. This may require wide work, as the lymphatics drain the breast in all directions, even to perforating between the intercostal spaces. (3) No one method of incision is applicable in all cases. Removal of large areas of skin is necessary, and grafting must be resorted to in a minority of cases. (4) All late cases on the border line between operable and inoperable cases should be X-rayed to determine the possibility of metastasis in the long bones. Especially is this true if the patients suffer any neuralgic pains in certain joints. E. H. WILLIAMS.

**Dardanelli: Anatomical and Clinical Data Concerning Sarcomata of the Scapula Treated by Total and Subtotal Resection** (Considérations anatomo-pathologiques et recherches cliniques sur les sarcomes de l'omoplate opérés par résection totale et subtotale). *La Riforma Med.*, 1912, xxviii, Nov.

By *Journal de Chirurgie*.

The author has had occasion to operate, in one year, upon two cases of sarcoma of the scapula, and the results have somewhat discouraged him. His first patient, whom he saw in the eighth month of his illness, was 8 years of age, and presented a large tumor of the left supraspinous fossa. This tumor completely filled the supraspinous fossa and part of the infraspinous; in fact, only the inferior angle of the scapula was free. The tumor was continuous, with a hypertrophied glandular mass in the axilla, and on examination it was seen that it also occupied the infrascapular fossa. The patient would not allow an interscapulo-thoracic amputation, so the author had to limit his intervention to a total scapulectomy. In the course of the operation the softer portion of the tumor ruptured and flooded the operative field with a semi-liquid, blackish material. Upon examination it was found that the tumor involved the bone, the periosteum, and the anterior and posterior scapular muscles. The tumor contained delicate osseous lamellæ surrounded by yellow connective tissue, fibroblasts, and small round cells having opaque nuclei. The lymphatic glands were not examined, nor was the blood. Six weeks later there were two recurrences in the scar, which were extirpated immediately. A month later, pulmonary and cranial metastases became evident and patient died with encephalo-meningitic symptoms.

The other patient, a woman 30 years of age, was seen in the fifth week of her illness. She presented in the right infraspinous fossa a mandarin-sized tumor. This tumor was limited to the infraspinous

fossa, the balance of the scapula being intact. A sub-total scapulectomy was performed, leaving in place the acromion process, the coracoid process and the articular cavity. The wound was completely healed on the twenty-fifth day. A specimen showed that the tumor was of periosteal origin and was limited to the infraspinous fossa. The bone was not involved but the muscles were infiltrated. Histologically, it was a small round-celled sarcoma. Though the tumor was limited, Dardanelli believes that it was malignant, and he regrets not having made a more extensive extirpation. AMEUILLE.

**Schumacher and Roth: Thymectomy in a Case of Basedow's Disease with Myasthenia** (Thymektomie bei einem Fall von Morbus Basedowi mit Myasthenie). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 746. By Surg., Gynec. & Obst.

The authors report a case of Basedow's disease with myasthenia, in which expectant therapy of ten weeks' duration brought no improvement. Ligation of the superior thyroid artery was followed, during the next four weeks, by an aggravation of the myasthenic symptoms, while the Basedow symptoms remained unchanged. A thymectomy was then performed, which was well borne by the patient. Soon after the operation the heart symptoms subsided and disappeared, the patient becoming restful physically and mentally. After two weeks' improvement the myasthenic symptoms became evident, and fourteen days later the pulse had gone down from 120-130 to 100-120, remaining there until the patient was discharged. Four months after the operation the myasthenic symptoms were much reduced, the Basedow symptoms, however, being little influenced. An examination fourteen months later showed considerable improvement in both the Basedow and myasthenic symptoms. A systematic blood examination is charted. The operation was immediately followed by a pronounced neutrophile hyperleucocytosis, with a relative and absolute diminution of lymphocytes in comparison to previous examinations. Ten days after the operation the findings in the blood were the same as before, and examinations made eight and fourteen months later revealed a completely normal picture. The course of the case speaks decidedly against a causal connection between myasthenia, Basedow's disease, and the function of the thyroid gland. The ligation of the superior thyroid artery was followed by a constant aggravation of the myasthenic symptoms. It seems important that the improvement of the latter occurred decidedly in advance of the favorable influence of the thymectomy upon the Basedow complex. E. S. TALBOT, JR.

## TRACHEA AND LUNGS

**Batzdorff: Surgical Treatment of Bronchiectasis.** *Zentralbl. f. d. Grenzgeb. d. Med. u. Chir.*, 1912, xvi, No. 1. By Surg., Gynec. & Obst.

This disease is difficult to diagnose, all the physical signs being unreliable, and yet the diagnosis must be



certain before operating. The X-ray is of some help, especially where the cavity is deeply located. The best time to take the picture is in the morning, after thorough expectoration. Pfeiffer recommends soft tubes and short exposure. The patient is to withhold the breath in one exposure and take a deep one in the other.

With the appearance of fetid sputum, operation is indicated. One lung should be healthy. Hæmorrhage from the cavities is a contraindication for operation. Evacuation of the abscess is not sufficient; the operation must be radical, even to the removal of a lobe of the lung, if the cavity is deeply situated. Various methods are given, with a complete review of the literature. E. S. TALBOT, JR.

**Schönberg: Rupture of the Bronchi Due to Thoracic Compression.** *Berl. klin. Wchnschr.*, 1912, xlix, 2218. By Surg., Gynec. & Obst.

Schönberg reports three cases of thoracic traumatism in which autopsy showed rupture of the larger bronchi. The first case is that of a child of 5 years who had been run over by a carriage wheel. He was brought into the hospital suffering with intense dyspnoea and exhibiting signs of a generalized pneumothorax as well as a subcutaneous emphysema of the whole upper half of the body. Death occurred five hours later. At autopsy the mediastinal tissues were emphysematous. There was a complete rupture of the left bronchus close to the hilum of the lungs. The external layers were ruptured somewhat higher up than the mucosa. The bony portion of the chest wall showed no fractures. The second case was that of a young man of 25 years who had been run over by a heavy wagon. The patient was very cyanotic, respiration being short and strident. The right side of the chest showed signs of an extensive pneumothorax. Death resulted from asphyxia. At autopsy it was found that there had been a complete rupture of the right bronchi. The two ends of the bronchus were separated from each other by more than 6 cm. The fifth rib on the right side was broken in its posterior third without any injury to the subjacent pleura. In the third case the autopsy was on a child of 12 years who had been crushed by a carriage and had died almost immediately with symptoms of asphyxia. The left bronchus was found ruptured close to the hilum of the lung, and the two segments had been displaced 2 cm. from each other. There was, moreover, an incomplete rupture of the same bronchus a little lower down, which affected only the internal layers. There were no fractured ribs.

Schönberg has brought together 13 more cases of traumatic rupture of one or both of the chief bronchi; these with his 3 cases gives a total of 16 known cases. Of these, 12 followed an injury due to the passage of a wagon wheel over the thorax. In 8 cases the left bronchus was affected, in 6 the right, and in 2 cases both bronchi. Almost all of the cases were infants or young adults, in whom

the elasticity of the thorax allowed a marked flattening. From examinations of his cases Schönberg concludes that the rupture is due to excessive internal pressure acting upon the bronchial wall. He supposes that an involuntary defensive reflex closed the glottis at the instant of the action; and since the bony structure of the thorax in children is unable to support the pressure, the air in the lungs is greatly compressed and the bronchial wall yields. He published earlier a case of rupture of the trachea by the same mechanism. He is certain that rupture due to a broken rib cannot explain the facts. In the first place, the picture at autopsy is more that of a tube ruptured from intrathoracic pressure; and secondly, in most of the cases no fractured ribs could be found. Tiogo has supposed that certain of these cases may be due to overstretching, the great pressure on the anterior and middle aspects of the chest forcing the two lungs apart until rupture of their bronchi occur. Surgical intervention could be of value only if practiced immediately. E. S. TALBOT, JR.

#### PHARYNX AND ŒSOPHAGUS

**Mizell: Treatment of Œsophageal Stricture.** *J.-Record Med.*, 1912, lix, 407.

By Surg., Gynec. & Obst.

In the treatment of all Œsophageal strictures that will admit the passage of a probe of any size, Mizell uses a set of instruments specially constructed with the view of producing gradual dilatation. The set of instruments consist of reinforced English bougies, a dilating electrode with and without probe point, a distensible dilator composed of rubber and silk bags placed over the end of a stomach tube, and a gauze electrode. Dilating electrodes and reinforced bougies are used until the stricture will admit the passage of a No. 30 sound. Dilatation is then continued by the alternate use of the distensible dilator and the gauze electrode, which is saturated with a solution of thiosinamin. As treatment of malignant stricture can only be palliative, a lumen that will admit a 30 to 34 sound will suffice, while in benign stricture permanent dilatation of the greater degree is sought.

**Bonniot and Bideaux: Radiologic Diagnosis of Œsophageal Diverticula** (Diagnose radiologique du diverticule de l'œsophage). *Bull. c. mém. d. l. Soc. d. Radiologie méd. d. Paris*, 1912, Oct.

By Journal de Chirurgie.

This patient, 66 years of age, was examined with the fluoroscope as well as radiographed. For the last four years he has suffered from marked dysphagia accompanied by tardy regurgitations (partly under the control of the will), as well as abundant salivation. Lately the regurgitated food has become fetid.

The patient was placed in the left posterior oblique position and was given a dose of bismuth. This stopped at a certain point of the œsophagus.



A second dose was given, which also stopped at the same level and increased the opacity there obtained. The patient was then given some bismuth milk, and the linear shadow of the bismuth could be seen as it flowed by the opaque spot, due to the cachets or powders previously administered. Thus the existence of diverticulum was shown.

The works of Béclere, Blum and Holzknecht have established a radiological symptomatology of œsophageal diverticula. Cases of this nature are now more frequently recognized, though the actual etiology of the cases which are not congenital in origin has not been solved. Nothing justifies the so-called classical distinction between traction diverticula and pulsion diverticula.

R. LEDOUX-LEBARD.

**Watson: Two Cases of Septic Ulcer of the Œsophagus.** *Brit. M. J.*, 1912, ii, 1182.

By Surg., Gynec. & Obst.

The author reports two cases which came under his notice at St. Bartholomew's Hospital, and which should be recorded on account of the rarity of the condition. The ulcer in the first case perforated into the left pleura; in the second case no perforation occurred. In the first case a diagnosis of perforated gastric ulcer was made, and in the second a diagnosis of gastric ulcer. In both cases acute abdominal symptoms occurred; laparotomy was performed, and nothing abnormal discovered. Both cases ended fatally, and both occurred in males over 40.

M. S. HENDERSON.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Farr: Abdominal Incisions.** *J.-Lancet*, 1912, xxxii 561.

By Surg., Gynec. & Obst.

A review of the literature shows that surgeons are more concerned with the methods of closing abdominal incisions than with the technique of making them. The names of Küstner, Rapan, Bardenhauer, and Pfannenstiel are intimately associated with the early development of the transverse incision. Its rationale is based upon the transverse direction of the fibres of the aponeuroses and the comparative importance of these structures, as well as upon the direction of the nerves.

A careful canvass of the literature was made in order to determine, if possible, the safety of the division of the rectus muscle. Many excellent authorities consider this procedure harmless when applied to the rectus, or indeed to muscles in general.

The author does not doubt that a better exposure can be obtained through the same length of incision by the transverse incision, where the rectus is cut, than by the longitudinal. If this is a safe and sane procedure, we should at once forsake the vertical incision in most of our abdominal work and use the transverse. The method has found greatest favor in Germany, is gaining ground in France, and is used to some extent in this country; but it is evidently not so popular here as abroad. In the upper abdomen the author has not hesitated to divide one or both muscles completely. In the lower abdomen preference has been given to the Pfannenstiel method. In closing the incision the tension is easily relieved by elevating the shoulders and knees. The divided muscles are not sutured, but are coapted by overlapping the aponeuroses, which have been split in the direction of their fibres. In very fat people lipectomy may be performed at the same time with great satisfaction.

In conclusion, the author says: first, that the transverse division of the rectus will give the opera-

tor the best chance to deal with every conceivable pathological condition within the abdomen, with the possible exception of immense solid tumors, with more convenience and speed and less retraction and handling of tissues with the resulting trauma and shock, than will the classical method; and excellent authorities who have used the procedure, and some whose opinions apply to muscles in general, agree that it is perfectly safe to divide the muscle transversely. Second, he realizes that this is a radical departure from the orthodox practice, and is not prepared to recommend its adoption at this time, despite its many apparent advantages and the opinions and arguments of these authorities. Third, in the procedure of Pfannenstiel we have a rational, safe and convenient method of opening the lower abdomen, which appears to have certain advantages over the vertical method and is worthy of more general use.

**Schiffman: Tumors of the Abdominal Wall** (Zur Kenntniss der Bauchwandtumoren). *Arch. f. Gynäk.*, 1912, xcvi, 543.

By Surg., Gynec. & Obst.

The author reports four cases of tumors of the abdominal wall. The diagnosis in the first was dermoid of the abdominal wall, occurring one year after supravaginal amputation of the uterus. The histologic findings showed a pure fibroma, surrounded by a chronic inflammatory capsule. The second case was diagnosed as fibroma of the abdominal wall, which appeared one and a half years after laparotomy and was found to an inflammatory fibroma with a chronic inflammatory covering. In the third case a diagnosis of fibroma of the abdominal wall was made two years after laparotomy for extrauterine pregnancy. The histologic findings were a tumor-like fibrous capsule around an abscess in the granulation tissue of an early date. In the fourth case the patient felt a tumor to the right of the umbilicus after lifting a heavy weight. The diagnosis was dermoid of the abdominal wall, and



the histologic findings revealed a fibroma, or rather an induration or sclerosis of muscle, which was almost free from inflammation.

The microscopic examination of not only the central, but also the marginal parts, of the tumors of the abdominal wall are of importance for the diagnosis. The reported cases show the possibility of spontaneous healing of abscesses located in the center of the Schofferian tumor, with complete resorption of their contents and with simultaneous formation of large solid tumors. In operation scars solid tumors are found which have no abscess or foreign body in their center, and which represent later stages of ligature tumors. The intermuscular tissue participates to a great extent in their construction. These forms cannot always clinically be separated. The therapy consists in extirpation. The fourth case, which was caused by trauma and which was not the late result of an operation, showed no inflammatory symptoms of any importance. The muscle tissue or its interstitium here also participated in the building up of the tumor.

E. S. TALBOT, JR.

**Lejars: Gelatinous Disease of the Peritoneum of Appendicular Origin** (La maladie gélatineuse du péritoine d'origine appendiculaire). *La Semaine Med.*, 1912, No. 50, 589. By Surg., Gynec. & Obst.

This is a report of three cases of the disease in question. In each instance operation was performed for appendicitis. In one case, following the operation for appendicitis, there was a discharge of gelatinous material through the wound. The material contained in these tumors was not as viscid as that found in similar tumors of the ovary, nor was there in any instance a tendency to malignancy. Lejars is rather inclined to think that this began as a cystic appendix, the contents of which apparently become gradually gelatinous and discharge slowly through a slight rupture in the distal end. The masses are then carried to different parts of the abdomen. In all, 20 cases have been reported, including the 3 in this report.

Following operation, with removal of the appendix, the outlook is very good. The mass consists of small cysts surrounded by a connective tissue wall which may or may not be lined with epithelium. The epithelium is sometimes cubical, sometimes columnar. One should not confuse this condition with colloid carcinoma of the appendix. In distinguishing between these two it should be borne in mind that pain is not a common or marked symptom of the pseudo-myxoma condition.

C. G. GRULEE.

**Falk: Contribution to the Experimental Study of the Radiotherapy of Tuberculous Peritonitis.** *Berl. klin. Wchnschr.*, 1912, xlix, Nov.

By Surg., Gynec. & Obst.

Falk's therapeutic experiments have been carried out wholly on animals. He has given guinea pigs intraperitoneal applications of the X-ray during

the course of laparotomies. The strength of the exposure has been sufficient to produce an intense erythema of the serous surfaces. No adhesions or ulcerations due to this radical treatment have been observed. In all, 22 animals were used. In the first series the animals were inoculated with large doses of tubercle bacilli and the operation was performed only after the disease was far advanced. At this stage, not only the peritoneum and the great omentum, but also the liver, spleen and kidneys, were studded with tubercles. In these cases the results of radiotherapy given during operation were not marked. The animals treated died as quickly as the controls; but at autopsy it was seen that the tuberculous process was less advanced on that portion of the peritoneum and the omentum which had been directly exposed to the rays. In the second series the inoculations were smaller and the period of treatment shorter; only the peritoneum and the greater omentum were involved by the tuberculous process. In all of these animals which were treated by radiotherapy complete healing was obtained, whereas of the controls, some of which had undergone laparotomy and some not, all showed at autopsy active tuberculous lesions.

M. C. PINCOFFS.

**Heffenger: Subphrenic Abscess.** *Med. Times*, 1912, xl, 321. By Surg., Gynec. & Obst.

Subphrenic abscess being a complication of a preceding condition, the symptoms of the original disease must be carefully considered and deductions drawn therefrom. A septic history stands first in importance, and secondly, thoracic symptoms at the base of the lungs. Given a history of appendicitis or other localized abdominal or pelvic peritonitis, general peritonitis, or a pus focus in any of the abdominal or pelvic organs, with subsequent development of obscure symptoms in the region of the diaphragm, suspect subdiaphragmatic abscess. These abscesses may occur at any age when of appendiceal, tubercular, or traumatic origin; but they usually occur after 40 when gastric ulcer is the cause.

When it is remembered how thin the tissues are which separate the chest from the abdomen it is readily understood why these double cavity symptoms are at once in evidence.

Besides pleural pain with rigidity of lower chest wall, râles, dullness, and fremitus are generally found. Pleuritic effusions may become marked and be followed by empyema. Infection of the pleura may occur from below the diaphragm by continuity or contiguity.

On the other hand, a basic empyema may infect the subdiaphragmatic region and cause a double abscess with the diaphragm intervening. The presence of gas in the abscess cavity, which usually occurs in about half the left-sided cases (whether perforation of a hollow viscus has occurred or not) and rarely on the right side, shows that gas may be due to the presence of a gas-forming bacillus,



either the *bacillus aerogenes capsulatus* (Welch) or the *paracoli bacillus aerogenes*.

It is possible for a subphrenic abscess to heal spontaneously through perforation into a hollow viscus or discharging externally, but expectant treatment usually results in death.

**Operation.** As these cases are of extreme gravity, and are always secondary to some other lesion or septic focus, early recognition and operation upon the causal focus would of course prevent their development. Subphrenic abscesses, however, when seen by the surgeon, are generally well developed, and large pockets of pus are usually found. Of course, immediate evacuation of these pus pockets, with free drainage, is demanded. Incision and drainage of the abscess having been done, the next step is to search out and remove the original cause. It must be borne in mind that distant pus pockets due to extensions from the original or secondary septic foci may exist from the lungs to the pelvis, and they must be found and thoroughly examined. In this connection it may be well to recall attention to the quotation from Barnard, in which he illustrates so graphically the extension of abdominal sepsis through gravitation.

A subphrenic abscess may be reached from above the diaphragm or below it, according to its most prominent presentation. When there is a decided presentation, incision should be made through it. The usual incisions are: (1) Through the anterior abdominal wall—epigastric. (2) Along the costal border. (3) Transpleural, through the chest wall and diaphragm. (4) A combination of thoracic and abdominal, after Moynihan. (5) Through the loin (Lannelongue). (6) Through the back (Lund). (7) Aspiration, with trocar and tubal drainage (Cantlie).

**Walker: Pre- and Post-Adhesions in Abdomen and Pelvis.** *J. Iowa St. M. Soc.*, 1912, lix, 1855.

By Surg., Gynec. & Obst.

Adhesions following operations within the abdomen and pelvic cavities are of interest and something every surgeon and physician must study carefully in order to avoid.

Walker has proposed the following zones for study and diagnosis: (1) The cæcal zone; (2) the pyloric zone; (3) the omental zone; (4) the pelvic zone. Especial attention was called to the omental zone, as the study in this zone shows that the omentum plays a far more important part in adhesions than is generally considered. The omentum is a great offender as well as a great defender, and the author is firmly of the opinion that in many patients wherein gastro-enterostomy has been performed, the appendix removed, or the gall-bladder drained with no favorable result, the omentum was the cause of the disturbance. Adhesions of the omentum attaching themselves to other organs do not cause any other trouble, but adhesions to the omentum itself or to the abdominal walls will cause a great deal of disturbance.

After describing the adhesions in the different zones, he says of the pelvic zone that adhesions do not cause any disturbance of nutrition, but they do cause more nervous phenomena than in any other zone, and the reason for this nervousness is almost wholly dependent upon the sexuality of the individual.

In the treatment, the author says that one who has made a careful study of adhesions can easily understand why medical men have claimed to cure adhesions through medication. The reason is obvious, as adhesions always tend to disappear; and in the majority of patients if the surgeon, the physician, and the patient all have enough patience to give nature an opportunity to assert herself in her proper manner, over 90 per cent of all patients having adhesions will entirely recover.

Patients should not be advised to have operations for the relief of adhesions performed earlier than nine months following the production of adhesions, except where nutrition is markedly interfered with or there is great pain and suffering. Adhesions readily occur following secondary operations, if the secondary operation is performed within a period of six months after the primary operation. One must wait until adhesions have ceased spreading and have become hardened, thin, and flat. Often it is better to perform other operations and leave the adhesions alone, such as extensive adhesions of the gall-bladder and liver to the stomach. In such a case gastro-enterostomy is often preferable.

**Ransohoff: Retrocæcal Hernia, with Report of Case.** *L.-Clinic*, 1912, cviii, 539.

By Surg., Gynec. & Obst.

The author describes a case of retrocæcal hernia, the eighth case of this nature on which an operation was done. The patient, aged two years, had two attacks of acute intestinal obstruction. At the first attack, which occurred when the child was eight months of age, the obstruction was relieved by operation without discovering its true nature. The symptoms of obstruction recurred when the patient was two years old. At the second operation, done at this time, a loop of small intestine was found incarcerated in a retrocæcal pouch. The loop of intestine was liberated and the pouch obliterated by dividing the lateral attachment of the cæcum. The patient left the hospital after two weeks and made a satisfactory recovery in every respect. There have been no after effects.

In the case reported, the site of obstruction was located before operation by X-ray examination. The author concludes that perhaps intestinal obstruction in retroperitoneal pouches is more common than the cases reported would indicate; that, as in the first operation on his own case, the obstruction may be relieved without discovering its true nature. The article contains a review of the cases hitherto reported and a résumé of the literature.



**Delatour: Thrombosis of the Mesenteric Vessels.**  
*Ann. Surg., Phila., 1912, lvi, 687.*

By Surg., Gynec. & Obst.

Attention is called to the fact that this is not such a rare condition as the literature would suggest. It may result from injury or be secondary to other foci of infection in the intestine, or it may be metastatic from distant foci.

The pathologic changes depend on the amount of interference with the blood supply, and may vary from small areas of necrosis of the intestinal wall with resulting ulcers to gangrene of many inches of intestine.

Initial symptoms are always acute and severe, but there are no pathognomonic signs. Pain is always excruciating. The symptoms closely resemble those of acute intestinal obstruction by band. Diagnosis is exceedingly difficult and only rarely is made before operation or post-mortem.

Four cases are cited, showing different forms of the condition. First, the very acute in which a large area of intestine is involved. These require early resection, and the mortality is high.

The subacute cases involve a smaller area, progress more slowly, and offer better results under operation. Several successful cases are referred to.

The more chronic cases involve smaller areas, but these may be multiple and result in ulceration of the intestine, with subsequent symptoms due either to obstruction, the result of contraction or, following perforation, the signs of peritonitis may appear. Three cases, showing as many different phases of the lesion, are reported under this head.

The condition is one well worthy of study, and when borne in mind in obscure abdominal cases may lead to more accurate diagnosis.

**Cantas: Cyst of the Peritoneal Wall Simulating a Hydrocele** (Kyste de la vaginale pariétale simulant une hydrocele). *J. de chir. belge, 1912, xii, 400.*  
 By Journal de Chirurgie.

A young man 16 years of age presented a right inguino-scrotal tumor the size of a fist. Its origin could be traced to the early years of his youth; since then it had developed slowly. It was believed that congenital hernia with concomitant hydrocele was the proper diagnosis. At operation Cantas found a hernial sac communicating with the peritoneal cavity inside of which there were two cysts the size of a pigeon's egg and of a cherry. Their pedicles started from the vaginal wall, at a point 3 cm. below the internal ring. A rapid exploration of the testicle, of the epididymis, and of the vaginal wall showed that these presented no abnormalities of any kind. The hernial sac was treated as ordinarily; the cysts were resected with the vaginal wall. Ten days later the patient left the hospital completely cured.

The contents of the cysts presented all the characteristics of hydrocele liquid. The walls of the cysts had a structure identical with that of the vaginal wall. They were composed of two layers, one of dense connective tissue and the other of

epithelial tissue, which lined the interior surface of the cysts and which was made up of pavement cells. Finally, the portion of the vaginal wall from which the pedicle depended, just like the pedicle itself, was the seat of an active inflammation which was characterized by a regular infiltration with polynuclear cells and lymphocytes and by the presence of numerous capillary vessels which had been newly formed and were gorged with blood.

Cantas believes that it was this inflammation which determined the formation of the two cysts in question. Under its influence, a sort of fold had been formed in the inguinal canal at the point in question and the edges of the fold had then joined in such a manner as to constitute a small serous parietal cyst, the inner surface being lined with pavement epithelial cells. The cysts so constituted had then developed slowly until they had reached the dimensions described above.

Mechanics like this are very logical and square well with the histological constitution of the wall of the cyst and with the chemical nature of the liquid contents.

J. DUMONT.

#### GASTRO-INTESTINAL TRACT

**Kerr: Volvulus of the Stomach.** *Ann. Surg., Phila., 1912, lvi, 697.*  
 By Surg., Gynec. & Obst.

Kerr reviews the literature of this rare condition and adds one case with autopsy to the eight recorded of true idiopathic volvulus of the stomach, i. e. volvulus not associated with diaphragmatic hernia, hourglass, inflammatory process, or tumor. The mechanism is a rotation of the stomach to the right and upward about a line carried through the cardia and pylorus as axis: the colon may be carried ahead or through rupture of the gastrocolic omentum may remain below. As the stomach rotates the pylorus is obstructed first; the cardia, when rotation is complete, is at an angle of 180°. The one common factor to all the cases is a relaxation or rupture of the ligaments of the stomach.

The probable etiology is an acute dilatation in the presence of relaxed ligaments. The clinical picture is that of acute pain and distention, with or without vomiting, which if present soon ceases; food cannot then be swallowed nor the stomach tube passed; upper abdominal distention becomes extreme, displacing the heart and everting the costal arches.

The treatment is surgical—and consists of laparotomy, aspiration of the stomach, followed by replacement and gastropexy if the patient's condition warrants.

LODER.

**Mazet: Volvulus of the Large Intestine and Its Surgical Treatment** (Les torsions pathologiques du gros intestin et leur traitement chirurgical). *Thèse d. Lyon, 1912, Nov.*  
 By Journal de Chirurgie.

The author is in favor of resection as a method of treatment in the different varieties of volvulus of the large intestine. He says that in the presence of intestinal gangrene, the mere untwisting of the



volvulus does not cause a disappearance of the accidents, and therefore immediate intestinal resection is indicated. But as in a large number of cases the patients are already weakened by a spreading peritonitis, it is often preferable either to resect the twisted loop and to sew the two mouths to the abdominal wall, or to leave the whole loop extra-abdominal. In early cases, in the absence of irremediable intestinal lesions, it is better after untwisting the gut to take such measures as will avoid future recurrences.

After having reviewed the different methods employed to secure this end, such as untwisting followed by fixation, entero-anastomosis, and exclusion, the author shows the advantages of intestinal resection, adding that it often has to be deferred, for in the majority of cases it is a mistake to subject patients suffering with acute intestinal obstruction to immediate intestinal resection. The first step of the operation, therefore, is to untwist the gut and create an artificial anus. This has the advantage of cleansing the alimentary canal and keeping it so until the patient is in shape for radical operation. As soon as the patient's condition warrants it, the gut should be resected. The artificial anus is liberated around its entire periphery and closed with a purse-string suture before opening the abdominal cavity.

G. COTTE.

**Stromeyer: Pathogenesis of Gastric Ulcer; a Contribution to the Study of the Interrelations of Ulcer and Cancer.** *Beitr. z. patholog. Anatomie u. z. allg. Pathologie*, 1912, v, No. 1.

By Surg., Gynec. & Obst.

Stromeyer believes that mechanical factors play a large part in the localization and form, if not in the production, of peptic ulcer. Its frequent situation on the lesser curvature, he believes, is due to the fact that at this point the alimentary bolus exercises a more marked friction. The great frequency of ulcer at the gastric orifices is to be explained by the firmer consistency of the food particles which are packed tightly together at these points. An interesting demonstration of the influence of mechanical factors is the fact that ulcers of the cardia have perpendicular margins, while in those of the pyloric region the margins are beveled. It is the mechanical factors which stamp the gastric ulcer with its characteristic physiognomy, though various etiological factors may be responsible for its first production. Stromeyer adds that many so-called indurated ulcers are really early cancers whose ulceration has been stamped with the characteristics of the peptic ulcer.

M. C. PINCOFFS.

**Jena: The Round Ulcer of the Stomach and Duodenum as "Secondary Disease"** (Das runde Geschwür des Magens und des Zwölffingerdarmes als "Zweite Krankheit"). *Mitteil. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 766.

By Surg., Gynec. & Obst.

The author's statistics show that gastric and duodenal ulcers are so frequently connected with

certain other lesions and diseases that there must be a relation between them. In many cases this can be proven, because the round ulcer appears as a secondary disease. Its origin is not caused by a transfer of the lesion through the blood-channels, but is the result of reflex nerve irritation. Experiments speak mostly for irritation of the vagus. The effects upon the stomach are important, as they show that muscle movements as well as secretion are dependent upon the nerves. Erosion and ulcer are only different stages or degrees of the same process. Erosions may be caused by cramps of the muscularis mucosæ, because they clamp the veins and arteries on their course through the mucosa. This clamping of the veins and arteries then leads either to hæmorrhagic infarct or ischemia, and these result in local digestive necrosis of the mucosa, especially if there is a simultaneous hypersecretion. The location of the round ulcer seems to be where the convulsive foldings or clappings of the musculature are of the longest duration.

E. S. TALBOT, JR.

**Barantchik: The Diagnostic Value of Painful Points on the Spine and Cutaneous Zones of Hyperalgesia in Gastric Ulcer.** *Roussk. Vrach*, 1912, xi, Nov.

By Surg., Gynec. & Obst.

Barantchik has investigated the diagnostic value of pain on pressure over the spinal processes (Openchovski signe) and of the presence of the cutaneous zone of hyperalgesia (Head signe) in cases of ulcer of the stomach. From this point of view he has studied 12 cases of ulcer, 16 of cancer, 18 cases of hyperacidia with hypersecretion, numerous cases of gastric catarrh, and several cases of hepatic disease. His conclusions are as follows: First, the presence of cutaneous zones of hyperalgesia is not constant; it is found in 75 per cent of ulcer cases and but very rarely in any other gastric affections. Moreover, the zones found in ulcer vary from those observed in other gastric disorders. The hyperalgesia is found over large segments of skin girdle-like in form. Head considered as characteristic of algæsia of gastric origin its localization in the zones innervated by the seventh, eighth and ninth dorsal segments. One or all of these may be involved. In Barantchik's cases the hyperalgesia was always limited to these segments, most commonly to the seventh. It was always more marked on the left than on the right side, and there were 2 cases where all three segments were involved on both sides. In one case the hyperalgesia was present over only the seventh portion of the left dorsal segment. In other gastric disorders one finds only certain painful points in these zones. In front, these are present along the costal margin between the xiphoid process and the anterior axillary line. Behind, they are most common between the angle of the scapula and the lowermost rib. In all the ulcer cases it has been proven possible to excite pain by pressure on the spinous processes — most usually (9 cases) between the third and seventh dorsal vertebræ; more rarely



between the seventh and the eleventh (1 case), or over the twelfth (2 cases). These painful points are very rare in other conditions. In four cases which were operated and in one which came to post-mortem the ulcer was found on the lesser curvature. In these cases the tender points on the spinous processes were distributed as follows: between the fifth and seventh dorsal (1 case), between the first and seventh (1 case), between the fourth and sixth (2 cases), and between the fourth and seventh (1 case); in another case the ulcer was found on the greater curvature near the pylorus, and in this case the tender area lay between the tenth dorsal and the second lumbar vertebrae. Barantchik found paravertebral tender points (Boas signe) in only two cases. He feels convinced of the value of the spinous points of tenderness in the diagnosis of gastric ulcer. M. C. PINCOFFS.

**Alvarez: New Surgical Treatment of Ulcer of the Stomach** (Nouveau traitement chirurgical de l'ulcère de l'estomac). *El Siglo Medico*, 1912, Nov.

By Journal de Chirurgie.

The author in 1905 published a description of a new treatment for gastric ulcer. It seems to have been completely forgotten. He reports 8 new cases showing the results that may be obtained from his method of treatment. In 1897 he had an opportunity of treating a 40-year-old patient who showed at the level of the seventh, eighth, and ninth vertebrae a small orange-sized tumor. For 38 months she had suffered with gastric pains, vomiting, epigastric tenderness, and almost complete intolerance for food. Her stomach would tolerate milk only. The tumor was removed and the patient ceased to have gastric distress from the day of the operation. Five years later the recovery persisted.

Astonished at this unexpected result, Alvarez could not help thinking that there was a direct relation between operation and cure, and concluded that the result was due to division of the nerves in the region of the operative field. He decided to renew the experiment in a woman who had a typical gastric ulcer. Though she had no tumor, he operated in the same manner and in the same place, dividing all the nerves of that region. From the fourth day on, the pain, gastrorrhagia, and vomiting ceased, and for six months cure was obtained. After six months, the symptoms recurred. He reports 8 new observations.

The first, a female, 27 years old, had suffered for the past three years with gastric ulcer; vomiting, hæmatemesis, and gastric intolerance. Under chloroform anæsthesia, he made a cutaneous incision parallel to the spinous processes, extending from the sixth rib to the ninth rib at a distance of two fingers' breadth from the median line. The aponeurosis of the muscular mass and of the muscles in the sixth, seventh and eighth intercostal spaces were divided and the corresponding nerves exposed. These nerves were stretched through moderate traction exercised from the center to the periphery.

The same operation was performed on the opposite side. The second day the patient had intense pain along the course of the intercostal nerves. Feeding was commenced on the third day; on the eighth day, soups, eggs, and fish were given and perfectly tolerated. A mild intercostal neuralgia persisted; all the other symptoms disappeared. The analysis of the stomach contents showed lessened acidity.

The second, a male, 49 years old, had suffered for 12 years from dyspepsia. He complained of pain, vomiting, hæmatemesis, and intolerance of food. The sixth, seventh and eighth intercostal nerves on both sides were stretched. Feeding was begun gradually, and all the symptoms disappeared.

The third was a male, 40 years old. For the past eight months he had suffered from gastric ulcer and hæmatemesis. The fifth, sixth, and seventh intercostal nerves were stretched and a segment of the fifth was resected. This intervention upon the fifth nerve was the result of a suggestion made to the author by Pawlow, who considers that the fifth nerve has a greater influence than the others upon gastric secretions. The results were very satisfactory from all standpoints.

The fourth, a male, 38 years old, had an ulcer of the stomach; vomited and suffered from hæmatemesis. The fifth, sixth, and seventh nerves were stretched and the fifth resected. On the day following the operation neuralgia and hiccough appeared and lasted eight days. He made a very satisfactory recovery.

The other cases were of the same nature and gave him happy results. All the patients were benefited by the operation, recovery being somewhat later in cases of long standing. Will these cures be permanent? The cases are too recent to permit positive statements. Nevertheless, the first cases are all about six months old, and recovery persists. As to the action of nerve-stretching upon the chemistry of the gastric juice, the author explains it as follows: In gastric ulcers reflex gastric secretion is very abundant and very acid. It is under the dependence of the sympathetic. By stretching the intercostal nerves a more or less marked disturbance in the sympathetic is induced and the reflex secretion is modified. SALVA MARCADÉ.

**Roberts: The Elementary Hypersecretion of Chronic Ulcer, as Shown by the Lactose Test-Meal.** *J. Am. M. Sciences*, 1912, cxliv, 715.  
By Surg., Gynec. & Obst.

The test-meal consists of 300 cc. of weak tea or water to which is added 30 gm. of lactose, plus two unsalted and unsweetened crackers. At the end of an hour a part of the chyme is recovered, and then a definite amount of water is poured into the stomach through the tube and mixed with the chyme by churning it back and forth. From the difference in the acidity of the two samples the total count is calculated, as suggested by Mathieu. The lactose content in the first portion is then accurately determined, and from that is determined the amount of



sugar remaining in the stomach, also the amount of chyme which is made up of test-meal residue and that which is made up of gastric secretion. Repeated tests by the author in the same individual show that the results are consistent. For comparison a number of cases were recorded, and if most of the test-meal residue is more than 50 cc. gastric motility is below par. The ratio of test-meal residue to gastric juice residue shows about 1 to 1½. If the two are equal or the gastric juice is less than the test-meal, there is deficient secretion. In the 13 cases of enteroptosis there was motor insufficiency, and in quite a large proportion the secretion was low. In 12 cases of ulcer the hypersecretion was marked.

The author concludes that hypersecretion is strongly suggestive of chronic gastric ulcer. As yet too few cases have been studied to say in just what other conditions hypersecretion occurs.

H. A. POTTS.

**Gwathmey: Surgical Treatment of Gastric and Duodenal Ulcers.** *Va. Med. Semi-Monthly*, 1912, xvii, 373.  
By Surg., Gynec. & Obst.

Gwathmey emphasizes the necessity of distinguishing between acute ulcers and acute exacerbations of chronic ulcers of the stomach and duodenum. This he says can be done by a knowledge of the symptoms coupled with carefully taken histories.

Acute ulcers are medical rather than surgical, inasmuch as 80 per cent (Fenwick) recover under medical treatment. If, however, in the course of medical treatment there should be a lack of prompt subsidence of symptoms, or if increasing pain, tenderness and rigidity indicate a progression toward acute or subacute perforation, a surgical consultation should be held at once. Chronic ulcer, on the other hand, is a surgical affection rather than a medical. An operation should be resorted to after one or two medical courses have failed to give permanent relief.

In the face of some of the abdominal catastrophes, such as fulminating pancreatitis, or ruptured ectopic pregnancy, the wisdom of a primary or a secondary operation is still debated, but there is no divergence of opinion concerning a perforated gastric or duodenal ulcer—an operation, whose promptness is limited by the time necessary to make suitable preparation, is indicated.

The use of cathartics is strongly advised against, and morphin is to be used after a diagnosis has been made. Attention is drawn to the fact that chronic obstructive symptoms, followed by a perforation, are more rapidly fatal because of the toxic gastric contents, and lowered resistance of the patient (Mitchell).

A free incision (preferably a right rectus) permits rapid operation, and speed spells success in such a dangerous circumstance. The exudate of serum, and the stomach contents are removed by sponging. The perforation is located and sutured by a purse-string suture of catgut, and reinforced by one or two

Lembert or Cushing sutures of silk or linen. Where possible the caliber of the gut must be considered, and this is best conserved by having the line of suture at right angles to the long axis of the gut. Should the rent prove to be so large or the induration so great as to preclude closure by suture, the opening may be sealed by suturing omentum or mesentery over it. The stomach and duodenum should be reviewed for other perforations, and if the patient's condition is satisfactory a gastro-jejunostomy or a pyloroplasty may be performed. It should be borne in mind that the immediate indication is to save life and that the relief of the underlying condition is a secondary consideration. Drainage is indicated except in very rare instances where soiling is practically nil and the after care is the Fowler-Murphy peritonitis treatment.

Chronic ulcers are treated by gastro-jejunostomy or excision or both. If there is much pyloric obstruction, a pyloroplasty of the Finney variety may be used. We advocate the no loop gastro-jejunostomy of the Mayo-Moynihan type. The ulcer should be excised and infolded directly or indirectly by suture, and reinforced by omentum and mesentery. The hourglass stomach resulting from ulcer should be treated by an excision of the ulcer and by an appropriate plastic operation.

Preliminary to operation we should give the patient frequent lavage, mild saline cathartics, abundant water, glucose by rectum, and twelve hours before operation two ounces of olive oil.

Post-operative treatment should consist of lavage for persistent nausea or vomiting. This, however, should be done with extreme caution. Saline by rectum and hypodermoclysis, water by mouth as nausea ceases, liquids in small quantities on second or third day, and careful feeding with the avoidance of unduly coarse food for a period of several months.

**Lecène: Five Cases of Perforated Ulcer of the Stomach or of the Duodenum, Which Were Operated Early and Cured** (Cinq cas de perforations d'ulcères de l'estomac ou du duodenum opérés précocement et guéris). *La Presse méd.*, 1912, xx, 865.  
By Journal de Chirurgie.

By publishing these five cases Lecène wants to demonstrate once more that in acute peritonitis due to perforation the fate of the patient depends in a unique manner upon the timeliness of the intervention and the effective closure of the perforation which has been the cause of the peritonitis. The timeliness of the intervention is subordinate to a timely diagnosis of the perforation. Now this itself is easy: the chief sign, which is constant and never deceives, is the reflex defensive contraction of the muscular wall of the abdomen. This symptom, one might say, is conceded by all to be of the utmost importance, but it is daily overlooked until so much valuable time has been lost that symptomatic treatment can no longer be employed.

During the course of ten years Lecène has had occasion to perform an emergency operation upon



five patients who were affected with acute diffuse peritonitis, which in four cases was due to the perforation of a gastric ulcer and in one case to the perforation of a duodenal ulcer. All these patients were speedily operated, within from six to twenty hours after the first appearance, always dramatic, of the symptoms, and were relieved of the peritonitis.

In three of the cases the diagnosis of perforation of a gastric or a duodenal ulcer was almost certain, since the history of gastric complaint of the patients was so clearly established. On the other hand, in the other two cases the absence of any signs whatever that would point to earlier pathological gastric conditions made the diagnosis much more difficult. Thus the predominance of painful symptoms in the right iliac fossa in these two cases even made the diagnosis of acute appendicitis more probable than that of a gastric or duodenal perforation. So, indeed, the first incision was made in the right iliac fossa; and it was not until the peritoneum had been opened and the small number of lesions found on the appendix that the diagnosis was corrected. No time was lost in searching for the perforation, which proved in the first case to have its seat on the stomach, and upon the duodenum in the second case.

It is not sufficient, however, that the intervention be timely — it must also be rational; that is to say, it must look above all to the complete removal of the cause of the peritonitis. In the particular class of cases which concern us here it is absolutely necessary to secure a hermetic closure of the gastric or duodenal perforation. To obtain this essential and vital result, it will not do to content ourselves with haphazardly closing the perforation by means of a few stitches, plugging it more or less completely with a bit of epiploön, or coupling it to the liver. We must rather, whenever it is possible, excise the ulcer and close the opening with a double line of suture, according to the established rules; if this excision cannot be carried out, it will be necessary to bury the ulcer beneath a thick and very carefully prepared seromuscular packing.

We add that in all the cases in which the operation is performed in time complementary gastro-enterostomy is a very good precautionary measure. Lecène has carried out this gastro-enterostomy in four cases; in the fifth case the gastro-enterostomy had already been made. Quickly executed on a subject who still retains his power of resistance, this immediate gastro-enterostomy offers the great advantage of putting the stomach into good condition for emptying itself; it also permits us to obtain an extensive and safe burying of the perforation, for we need no longer be concerned about any stricture formation at the point of invagination of the perforation.

So far as drainage is concerned, Lecène believes that drains placed in the region of the epigastrium are useless, to say the least, and he contents himself with draining Douglas' pouch by means of a small suprapubic counter-opening. This drain may remain in place for from 48 hours to three days, as

long as one sees that the patient is carefully kept in a sitting position in his bed, or if aspiration is employed; if the drain is withdrawn on the fourth or fifth day it will not complicate in the least the subsequent operations, and it also has the advantage of preventing a secondary collection of pus in Douglas' pouch.

J. DUMONT.

**Davis and Deming: The Effect of Scarlet Red on Defects in the Mucous Membrane of the Stomach.** *Bull. Johns Hopkins Hosp.*, 1912, xxiii, 332.  
By Surg., Gynec. & Obst.

While using scarlet red in the treatment of ulcers of varying etiology, on the skin, and on mucous membranes, it occurred to the authors that possibly ulcers of the alimentary tract, especially ulcers of the stomach, might be benefited by the use of scarlet red if it could be brought into contact with the ulcerated surface. Before attempting to administer this substance to patients suffering with gastric ulcer some experimental work on animals was undertaken, which was followed by a number of operative experiments. They first investigated the toxicity of the substance when given internally in order to familiarize themselves with its effect on the general health of the animals as regards weight, excretions, hæmoglobin, etc. These experiments were mostly carried out on dogs. The animals were given doses of varying sizes, during periods of two or three months. In some instances the scarlet red was administered in olive oil, and in others the powder was administered in capsules.

Briefly stated, these experiments led the authors to believe that internal administration of scarlet red, either in oil solution or as dry powder, has no toxic effect, either on the economy as a whole or on any special organ. There was no purgative action, and the urine was unchanged. There was no abnormal stimulation of the mucosa anywhere in the alimentary tract. The mucous membranes of the bladder and gall-bladder were unaffected. Microscopic examination of the various organs and tissues showed no change which could in any way be traced to the dyestuff.

Experiments were also undertaken to determine the toxic effect of scarlet red in the lax subcutaneous tissue and in the peritoneal cavity. Here, likewise, no untoward symptoms were observed. Small quantities of scarlet red-oil, injected intraperitoneally, were encysted as any other foreign body. When larger quantities of the oil or oil emulsion were injected a general peritonitis followed. There was only local staining of the fat which came in contact with the oil. This material acted in the abdominal cavity as any other non-absorbable irritating powder would, and had no specific toxic effect.

After these preliminary experiments the authors concluded that the toxicity of the dyestuff used was a negligible quantity, and felt justified in proceeding with the operative experiments. The stomach was chosen as the site of the operative defects, on account of its accessibility and also because of the prevalence of ulcers in this organ.



Fifteen sets of experiments were done on thirty dogs. Under ether anæsthesia a small portion of the mucosa was excised quite close to the pylorus, in each instance as near as possible in the same situation and of the same depth. Their experiments may be divided into three groups: First, those fed with the oil solution of scarlet red; second, those fed with olive oil without scarlet red; third, those fed with dry powder.

Those fed with the olive oil alone acted as a control on the other two groups. Briefly, the author has found that in Group 1 (fed with scarlet red-oil solution), the defects made artificially in the feeders were further advanced toward healing than in corresponding controls in four out of five instances. In Group 2 (fed with pure olive oil), similar defects in feeders were further advanced than in corresponding controls in three out of five instances. In comparing the advancement of the healing in the feeders in the duplicate experiments in these two groups, they found that the epithelial stimulation was more marked in those animals fed with the scarlet red-oil solution than in those fed with pure olive oil. In Group 3 (fed with dry powder), similar defects in feeders were further advanced toward healing than in corresponding controls in only two out of five instances. The authors conclude that:

The dyestuff used in this series of experiments is not toxic, and apparently has no deleterious effect on either dogs or rabbits.

When given by mouth it is a fat-selecting vital stain. In the course of months the stain is gradually eliminated. Subcutaneous and intraperitoneal injections stain only the fat in actual contact with the scarlet red-oil solution.

It is difficult to say from these few operative experiments whether the scarlet red has or has not a definite stimulating action on the epithelium of defects in the gastric mucosa. However, the scarlet red-oil solution caused a more rapid and better developed growth of epithelium in the group in which it was used than occurred in the duplicate group where plain olive oil was used.

The results with dry powder were not so favorable experimentally, but this may have been due to the fact that the material was not continuously in contact with the denuded area.

They were unable to determine the relative effect of the scarlet red on chronic gastric ulcers, as it was impossible to produce chronic ulcers in dogs with controls of exactly the same size.

Their experiments are suggestive, and as this dyestuff may be safely administered they feel it deserves a thorough clinical trial. G. E. BEILBY.

**Schlesinger: Wedge-Shaped Resection of the Stomach for Gastropotosis** (Die Behandlung der Gastropotosis durch keilförmige Resektion in der Pars Media des Magens). *Mittell. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 527.

By Surg., Gynec. & Obst.

In a case of gastropotosis in a woman 51 years old, the author resected the median part of the stomach

between the pylorus and the cardia, thus removing the narrow part where the walls were touching each other, reducing the length of the stomach to a little below the normal, and making room for the normal position of the other abdominal organs. The patient made an uneventful recovery, has had no trouble from the stomach since, has a good appetite, and feels best when she takes frequent meals of small quantity of food. The author warns against resecting too near the pylorus, because the wall of the stomach is more muscular there and its preservation is valuable for good motility. There should be just enough resected to give the stomach the normal shape. Only a small number of gastropotoses resist any internal therapy and they have the clinical picture of atony. When clinical observations show that the symptoms are really caused by the stomach, and continued internal therapy fails, operation is indicated. The median portion of the stomach in these cases is weakest functionally and its evacuation is delayed, causing pressure on the colon with resulting constipation. Resection relieves all this.

E. S. TALBOT, JR.

**Röpke: A New Method of Gastrostomy and Esophagoplasty** (Ein neues Verfahren für die Gastrostomie und Esophagoplastik). *Zentralbl. f. Chir.*, 1912, xxxix, 1569. By Surg., Gynec. & Obst.

The author describes a gastrostomy which he performed according to the method of Jianu. Jianu developed the procedure experimentally, and as far as Röpke knows, it has not been used practically. He describes the operation as follows: An incision was made in the median line above the navel. A tumor was found in the region of the cardia (inoperable carcinoma). The omentum was detached from the greater curvature, carefully avoiding injury of the gastric vein and artery. The vessels were ligated near the pylorus and severed. A lock-stitch suture is begun at this point,  $2\frac{1}{2}$  finger-breadths from the greater curvature. This suture unites both anterior and posterior walls and passes up to the fundus far above the point where the left gastric artery approaches the greater curvature. The portion of stomach nearest the greater curvature is now detached. This detachment begins close to and in front of the pylorus and runs parallel with the suture to its upper end. The detached portion is reflected outward and wrapped in gauze. The suture line is invaginated with seromuscular sutures. This same suture is continued upon the detached portion, transforming it into a tube communicating with the stomach. The abdominal cavity is closed up to the point of egress of the tube. At this point the stomach is attached to the abdominal wall by sutures, carefully avoiding the vessels. The suture of the tube is then completed. A small sponge tied to a piece of silk is introduced into the free end and the end closed over it by invagination sutures. A transverse incision is made below the clavicle, the point of incision varying with the length of the tube—in Röpke's case 22 cm. The pectoralis major is



split bluntly through the incision and a subcutaneous tunnel made reaching to the upper angle of the abdominal wound. The suture protruding from the tube is grasped with the forceps and the tube pulled through the tunnel. Complete closure of the abdominal incision follows. The tube is attached to the incision in the chest, the invaginating sutures are removed, also the sponge, and the mucous membrane united to the skin margins.

The wounds healed by first intention. Röpke believes he has seen contractions which resemble peristalsis in the newly formed tube during passage of food. He thinks that this tube may be used with better advantage for the formation of a new œsophagus than the material heretofore in vogue. The tube is longer, its nutrition is assured, and it can be brought into communication with the cervical portion of the œsophagus.

E. C. RIEBEL.

**Tatlow: Jejunostomy in Combination with Anterior Gastro-Enterostomy.** *Lancet*, Lond., 1912, lvi, 1434.

By Surg., Gynec. & Obst.

Jejunostomy is an operation which is comparatively rarely performed. The author reports two particular cases showing a fresh use for jejunostomy. These are cases of chronic gastric ulcer where, owing to extensive firm adhesions between the posterior surface of the stomach and the pancreas, the ideal procedure, namely excision, cannot be performed. In these cases gastro-enterostomy is the routine treatment, owing to the impossibility of getting at the posterior surface of the stomach. Experience teaches that these very large chronic ulcers, surrounded often by a mass of inflammatory tissue, do not in every case heal after an anastomosis has been made. They appear to need a more complete rest than a mere gastro-enterostomy offers them. It is for cases such as these that jejunostomy, combined with the modified Roux gastro-enterostomy, is suggested. Moynihan has performed the combined operation in five instances and the author reports two of these cases. In both a large ulcer was found on the posterior wall of the stomach adherent to the pancreas. An anterior gastro-enterostomy was done in each case, and the patients were entirely relieved for a time. A recurrence of the old symptoms suggested the advisability of more complete rest, and a jejunostomy was done after the Witzel method. Although only a few months have elapsed, there is no return of symptoms.

D. C. BALFOUR.

**Marinacci: Treatment of Intestine Deprived of Its Mesentery by Intestinal Invagination** (Traitement de l'intestin privé de son mésentère par l'invagination intestinale). *Il Policlinico*, 1912, Nov. By Journal de Chirurgie.

The author refers to various attempts which have been made to prevent necrosis of an intestinal loop deprived of its mesentery and cut off from its source of nutrition. There is a like difference of opinion as to whether resection should be made

and carried out in a thorough manner or whether a more simple operation will suffice. Spontaneous cure occurs by elimination of the invaginated coil and by an adhesive peritonitis between the two intestinal extremities.

The author has sought, on the advice of Prof. Alessandri, to determine whether invagination could not be utilized as an easy and rapid medium. He argued that it was logical to admit that the rapid necrosis of an intestinal coil, deprived of nutrition and invaginated, would lead to the re-establishment of the continuity of the gut before grave circulatory troubles had occurred.

He has made 25 experiments upon animals in order to learn if it were possible for them to survive after an invagination of a coil of greater or less length of intestine deprived of its mesentery. Various procedures were employed to detach the mesentery from the intestine; to effect it, invagination, always descending, and likewise various sutures were employed to secure the two ends of the intestine at the level of the neck of the invagination. The small intestine was selected in 21 cases and the large intestine in 4. Dogs were used in all the experiments. Ten animals are still alive, while 15 died almost immediately after intervention.

Fæcal circulatory disturbances after this operation need not be feared unless adhesions be present or be formed between neighboring coils and the one operated on. Late stenosis need not be feared. The author found that it was possible to eliminate a coil 8 cm. in length. This was the maximal length that could be safely eliminated. The larger the intestine, the greater the length of intestine involved, the easier it was to produce invagination and the less the danger of necrosis of the invaginated portion. The fate of a loop deprived of its mesentery is its more or less rapid necrosis and elimination.

From the results of these experiments the author believes the operation to be feasible, but one having high mortality. It will always be a procedure of limited application.

A. BASSET.

**Le Moniet: Ulcers of the Duodenum with Stenosis of the Pylorus and Œdema of the Gall-Bladder; Cholecystectomy, then Gastro-Enterostomy; Recovery** (Ulçères du duodenum avec sténose du pylore et hydropsie de la vésicule biliaire; cholécystectomie, puis gastro-entérostomie; guérison). *Bull. et mém. d. l. Soc. d. Chir. d. Paris*, 1912, xxviii, 1219.

By Journal de Chirurgie

Le Moniet reports the history of a man 36 years of age, who for some months had presented all the signs of a gastric ulcer, when the symptoms of pyloric stenosis began very rapidly to manifest themselves. The man was reduced to such a state of emaciation and feebleness that he went to a hospital, where a diagnosis of gastric dilatation with stasis was made; The examination also revealed the presence of a large tumor the size of an orange, and to this the gastric stasis was attributed (pyloric stenosis by compression).



The operation verified the diagnosis of oedema of the gall-bladder, but it also showed that this did not produce any compression in the duodenopyloric region. On the other hand, after its evacuation by puncture the presence of a cicatricial band was revealed. Starting from the first portion of the duodenum, in the neighborhood of the pylorus, it extended above and outward from the cystic canal, investing the first portion of it and obliterating it completely at this point, so that a speculum could not be passed in between the bladder and the common bile-duct. The center of the adhesions was found to be a cicatricial nucleus occupying the duodenal wall. The patient being in a condition too serious to undergo an operation of any complexity, Le Moniet limited himself to a cholecystectomy. Two months later, when the patient's condition had improved, he performed a gastro-enterostomy. To-day the patient has completely recovered.

Apropos of this case, Auvray reviewed the complications which affect the biliary tract during the development of a duodenal ulcer. These represent obliteration of the common bile-duct and of the duct of Wirsung by an ulcer located in the neighborhood of the ampulla of Vater; ulceration of the common bile-duct and of the gall-bladder caused by the perforation of a duodenal ulcer, associated with the formation of choledochous or choledochoduodenal fistulæ; stricture of the bladder by cicatricial bands etc. Finally he cited various cases illustrating these pathological conditions which have been reported in the literature, and also the various operative procedures which have been employed in their treatment.

Gosset has recently operated a woman whose case deserves to be mentioned with Le Moniet's case and which at the same time is instructive clinically and therapeutically.

This patient, 55 years of age, had during the past twenty years, presented very clear symptoms of cholelithiasis. In addition, for a number of years she had presented a symptom-complex, which was considered to be caused by a duodenal lesion. Radioscopy revealed the existence of a dilatation of the duodenum above a point of stricture which corresponded precisely with the seat of maximum spontaneous pains. The patient was operated after a tentative diagnosis of duodenal ulcer. At operation Gosset found a normal stomach, a normal pylorus, and a normal duodenum, without trace of either cicatrices or strictures. On the other hand, in the region of the gall-bladder, lodged beneath the liver and directed transversely, he found a series of calculi which filled and distended the fundus. The latter, turned toward the left, was closely adherent to the second portion of the duodenum the breadth of three fingers below the first duodenal curvature; the gall-bladder, by reason of its rotation to the left, pressed heavily against the right border of the duodenum. After discovering the pathological condition cholecystectomy was performed, and in

addition, gastro-enterostomy, since there was a probability of duodenal ulcer. An uneventful recovery resulted, the patient getting up on the eleventh day.

Did this patient have a simple lithiasis of the gall-bladder, or did she also present a duodenal ulcer? This second lesion is most probable; but what develops from this case is that whenever the radiograph reveals the presence of a duodenal stricture it is not only most necessary to take into account the possibility of an ulcer of the duodenum, but also the possibility of an external compression brought about by the gall-bladder, even when the latter cannot be felt by palpation, unless the two lesions coexist.

From the therapeutic point of view, an operation on the gall-bladder appears necessary. So far as complementary gastro-enterostomy is concerned, it so little aggravates the prognosis of the operation that its performance is always indicated, and it should be carried out at the same time as the other operation.

J. DUMONT.

**Gruber: Peptic Duodenal Ulcers** (Die Lehre über das peptische Duodenalgeschwür). *Mitt. a. d. Grenzgeb. d. med. u. Chir.*, 1912, xxv, 465.

By Surg., Gynec. & Obst.

In 5884 post-mortem dissections performed from 1899 to June, 1912, 7.7 per cent had peptic ulcers; 1.5 per cent were in the duodenum, 6.7 per cent in the stomach, and 1 per cent in the œsophagus. The bodies were those of the poorer classes. These statistics do not, however, conform with those of Moynihan, the Mayo brothers, and M. Robson. The histories of 88 cases from the Munich clinic and 52 cases from the Strassburg clinic are given in detail. In these 140 cases of duodenal ulcer, 17 per cent died of perforation. Gruber emphasizes that circulatory changes in the duodenal mucosa is the chief cause of ulcer. Those with arteriosclerosis may have a peptic ulcer and the clinical signs be absent. It is discovered only when there is an occult hæmorrhage; this is especially so in old people. The anterior duodenal wall is the usual location of the ulcers.

E. S. TALBOT, JR.

**Hörmann: The Necessity of Prophylactic Appendectomy During Gynecological Operations** (Die Notwendigkeit der prophylaktischen Appendectomie bei gynäkologischen Operationen). *München. med. Wchnschr.*, 1912, I, 2503.

By Surg., Gynec. & Obst.

During the last three years the author has removed the appendix primarily in 32 cases and secondarily in 59 cases of 208 gynecological operations with the best results. On the other hand, relapses, and later appendicitis, quite frequently occurred when the appendix was not removed at an earlier gynecological laparotomy. He concludes from the above that: (1) The appendix should be removed with every gynecological operation; (2) it is not sufficient to remove only the macroscopically



changed appendix, for severe inflammatory changes often escape palpation and sight, and a diagnosis is only possible after microscopical examination; (3) in cases of malignant tumors, in emergency operations, in patients over 60 years of age or in extensive operations of long duration, the removal of the appendix may be omitted, but these are the only contraindications for removal.

E. S. TALBOT, JR.

**Becker: Appendicitis in a Left-Sided Inguinal Hernia in an Infant.** *Arch. f. Kinderh.*, 1912, lix, Nos. 1 & 2. By Surg., Gynec. & Obst.

According to the author, this is the only case on record where an inflamed and partially gangrenous appendix constituted the contents of the sac of a left-sided inguinal hernia in an infant two months old. Examination of the patient revealed an inflamed, hard and very tender swelling occupying the left inguinal region. Both testes were in the scrotum. Temperature 38.8° C. The diagnosis lay between incarcerated hernia, hydrocele communicans, or abscess. After dividing the skin and fascia, a sac filled with serous fluid protruded. The gangrenous appendix was lodged in the sac. Complete recovery followed the removal of the appendix. The author ascribes the condition to an abnormally movable cæcum.

E. S. TALBOT, JR.

**Sugi: Changes in the Appendix with General and Peritoneal Infection** (Ueber Veränderungen des Wurmfortsatzes bei allgemeiner Infection und bei Peritonitis). *Virchow's Arch.*, 1912, ccx, 294. By Surg., Gynec. & Obst.

After a consideration of 27 cases of peritoneal and 13 of general infections, Sugi comes to the following conclusions: In general infections from staphylococci and streptococci, emboli may be formed in the appendix without any surrounding reaction. The emboli may locate in any layer of the appendiceal wall, more frequently in the mucosa or submucosa. The lymph follicles are not the place of predilection for these emboli. Hæmatogenous metastatic abscesses may develop in all layers of the appendix. Extra- and intranodular hæmorrhages are found in the mucosa and submucosa. Microscopically they are free from bacteria. In acute general miliary tuberculosis, hæmatogenous metastatic miliary tubercles may be found in any of the layers of the appendix.

In acute purulent peritonitis, inflammatory changes are found in the appendix corresponding to the duration of the peritoneal infection. In most cases these changes are confined to the serosa alone or to the serosa and the outer layers of the muscularis externa; the entire muscularis externa is seldom attacked, and still more rarely the muscularis interna. Exceptionally the inflammatory process may penetrate the submucosa to the mucosa. The migration takes place in such cases through the lymph vessels and clefts in the tissue. The author's

cases of this kind all dealt with children, and the cause of the process was the streptococcus pyogenes. The entire appendix may be attacked, or the distal end may be affected worse than the proximal. In the majority of cases the infection apparently comes from the mesenterium, and is more intensely developed at the junction of the mesenterium with the appendix.

E. S. TALBOT, JR.

**Depage and Mayer: Radical Treatment of Cancer of the Rectum** (Traitement chirurgical du cancer du rectum). *J. Med. d. Brux.*, 1912, Nov. By Journal de Chirurgie.

These authors discuss the etiology, diagnosis, and pathological anatomy, as well as their personal ideas of the treatment of this condition. They insist first upon the importance of pre- and post-operative care. They do not habitually perform a preliminary artificial anus: they believe that the influence of this operation as a means of disinfecting the rectum is illusory, and that the presence of an artificial anus compromises asepsis in cases of abdomino-perineal intervention and interferes with the maneuvers to lower the rectum. An artificial anus is made only in cases in which the cancer is immobilized by a mass the nature of which cannot be definitely determined clinically, and which may be inflammatory and non-neoplastic, and disappear after the colostomy to the extent of rendering the rectum extirpable. In all their operations upon the rectum, except those which are amenable to the abdomino-perineal operation, they place the patient in the ventral position. In cancer of the inferior portion of the rectum they perform the operation of Lisfranc-Quénu-Baudet.

If the tumor is in the middle portion of the rectum, or even towards the upper portion of the ampulla, they use the sacral method. They make a median cutaneous incision extending from the middle of the resected sacrum to within 3 or 4 cm. above the anus. The coccyx is liberated and the rectum, circularly detached from the neighboring organs, is ligated below the tumor by a strong silk ligature, below which it is cut. A supplementary silk suture closes the superior segment, which is then detached from its lateral and anterior adhesions and progressively lowered. One should be careful to seize the vessels and divide the surrounding tissues so as to save as much as possible the collaterals and thus not compromise the rectal circulation. In the course of the operation the peritoneal cul-de-sac is opened. It is carefully sutured when the lowering of the bowel is considered sufficient. In fleshy subjects with short mesos, descent of the rectum is at times difficult. One should in these cases lengthen the segment by nicking the longitudinal bands of the intestines so as to unfold it, the gut, accordion-like. When this has been done the two ends have to be united. These authors invaginate the gut, carrying the proximal end through the anal portion and fixing it by a few stitches to the skin. If the tumor is near the sphincter, abrade the



mucosa of the entire inferior segment and invaginate the superior gut segment through the sphincter. The wound is left open and packed.

In rectosigmoidian cancer, or a cancer involving the entire rectum, the authors use the combined abdomino-perineal method. They practice a high peritonization of the abdomen. After transversely incising the abdominal wall above the pubic symphysis, they detach the peritoneum of the superior lip and fix it by a few sutures to the posterior pelvic peritoneum.

Golpel has performed 21 of these abdomino-perineal operations with only 3 deaths. The authors insist that the prognosis of intestinal cancer treated surgically shows during the last few years a very marked improvement. PAUL MATHIEU.

**Elting: The Treatment of Fistula in Ano, With Especial Reference to the Whitehead Operation.** *Ann. Surg., Phila., 1912, lvi, 744.*

By Surg., Gynec. & Obst.

Tuberculosis plays a comparatively unimportant rôle in the etiology of fistula in ano, not more than 10 per cent of the cases being of this variety. Most fistulæ originate in an infected hæmorrhoid, and the infection is of the usual pyogenic character. Practically all persistent fistulæ in ano communicate with the bowel, although in many cases this communication may be microscopical rather than macroscopical. Two cardinal principles should underlie the treatment of fistula in ano: first, the separation of the fistulous tracts from the communication with the bowel; second, the adequate closure of the communication, with the removal of all the diseased tissues in the rectum. The treatment proposed by the writer consists of a Whitehead operation carried just above the level of the internal opening of the fistula, or, if no internal opening is demonstrable, to the level of the insertion of the levator ani muscle. The healthy skin and mucous membrane are approximated with interrupted silk sutures and the fistulous tracts carefully curetted and lightly packed with gauze. Complete healing is usually obtained in from 10 to 20 days. This study is based upon 105 consecutive cases treated by this method, with cure of the fistulæ. Of these 105 cases, all of which were carefully examined histologically, only 9 proved to be tuberculous.

From his studies and experience the writer draws the following conclusions:

First, that probably not more than ten per cent of fistulæ in ano are tuberculous, and that a great majority of these are secondary to demonstrable tuberculosis elsewhere in the body, usually in the lungs. Second, that a widespread and often destructive dissection and removal of the fistulous tracts in the perirectal tissues is unnecessary. Third, that it is possible to cure fistulæ in ano without injury to the sphincters and with a preservation of all the sphincteric function possessed prior to operation, by the application of the Whitehead principle of rectal excision.

## LIVER, PANCREAS, AND SPLEEN

**Gade, Thévenot and Roubier: Liver Abscess in Autochthonous Amœbic Dysentery** (Les abcès du foie dans la dysentérie amibienne autochtone). *Archiv. d. mal. d. Pappar. diges. e. d. l. nutrition*, 1912, vi, Oct. By Journal de Chirurgie.

The authors could collect only four cases of autochthonous amœbic dysentery occurring in France. They report two cases in which dysentery was complicated by liver abscess.

In the first patient a clinical diagnosis of hypertrophic hepatic cirrhosis with ascites was made. The subject was an alcoholic and presented the stigmata of tuberculosis. There were present hepatic insufficiency and terminal delirium. The autopsy disclosed a voluminous abscess of the right lobe of the liver, containing two quarts of yellowish pus. There were multiple ulcers of dysenteric origin in the cæcum, and an old pulmonary tuberculosis. There were pericardial and pleural adhesions. There were numerous yellow ulcers of the intestines, which did not extend beyond the fundus of the glands. Diplococci and tubercle bacilli were present in the hepatic pus.

In the second patient a clinical diagnosis of hepatic hypertrophy was made. There was present a large abscess. An operation was performed. The autopsy disclosed a voluminous liver with an abscess containing 4 litres of pus. There was a small abscess posterior to the first. There were no intestinal lesions. There were amœbæ in the abscess wall. The injection of the pus in guinea pigs determined a mild tuberculization. The contagion of autochthonous amœbic dysentery is usually due to contact with dysenteric subjects.

As to the pus of a liver abscess, it is often sterile, but this sterility is usually secondary. The amœbæ must be sought in the scrapings or in the abscess wall. The association of tuberculosis is relatively frequent. The diagnosis is difficult. It is important to keep in mind the antecedents of subjects having a large liver, difficult of interpretation. If the tumefaction of the liver is localized, the diagnosis is easy, but it is often late. Rapid increase in the size of the liver and localized tenderness on palpation are suggestive. The presumption of hepatic abscess leads naturally to the examination of the intestines, either directly with the rectosigmoidoscope, or indirectly by examination of the stools for amœbæ and inoculating the intestinal tube of a young cat with the rectal contents of suspected case. Early diagnosis enables one to institute an effective therapy, which will always consist of the opening and drainage of the abscess. In all cases, exploratory laparotomy is preferable to blind puncture. J. OKINCZYC.

**Munk: A Case of Cure of a Simple Cyst of the Liver.** *Berlin. klin. Wchnschr.*, 1912, xlix, 2174.

By Surg., Gynec. & Obst.

A woman 44 years of age had suffered for two years with digestive disturbances and had become ex-



tremely emaciated. A large tumorous mass was present in the region of the liver. Examination of the tumor suggested its being a cyst; but its precise nature was impossible to determine; the echinococcic reaction of Weinberg was negative, Wassermann's reaction was also negative, and only the cancerous reaction of Brieger was positive. Jaundice was rather pronounced, but there was no urobilinuria. General condition was extremely low.

Upon operation, a cyst as large as a child's head was found. Since extirpation was impossible, the cyst was attached to the anterior abdominal wall without its being opened, after a subjacent protective barrier had been prepared. Upon puncture, two days later, an opaque fluid escaped which proved to be sterile. Tests for urobilin in the urine always proved negative. Jaundice caused by compression of the biliary tracts still persisted.

Six days later a second operation was decided upon. The effects of this second intervention were very grave, but the patient finally recovered. The jaundice disappeared after a few days; urobilinuria appeared four days following the operation, after a colon bacillus infection of the gall-bladder had resulted from removal of the cyst.

From the fact that in spite of a very marked biliary retention urobilinuria was absent until after infection of the bile, Munk agrees with Schili, Mueller, and Hilderbrand, and concludes that when urobilin is normally formed in the intestine by the reduction of bilirubin, it passes into the vena portæ and is destroyed or transformed in the liver into bilirubin; but that when the pathological changes in the hepatic parenchyma prevent the destruction of urobilin it passes directly into the blood and appears in the urine. Yet there are cases such as the above, in which, in spite of a marked arrest of liver function, urobilinuria does not appear so long as this arrest is purely mechanical, while an infection of the biliary tract will nearly invariably cause urobilinuria. We therefore have pointed out to us here a diagnostic and prognostic significance of urobilinuria which it will be well to remember.

E. S. TALBOT, JR.

#### **Hellström: Spontaneous Recovery from Acute Post-appendicular Suppurative Hepatitis.**

*Beitr. z. klin. Chir.*, 1912, lxxxi, 546.

By Surg., Gynec. & Obst.

In this article Hellström gives two interesting cases showing the possibility of spontaneous recovery from acute post-appendicular suppurative hepatitis, one of the most dreaded complications of appendicular infection.

In the first case the recovery was probably not absolutely spontaneous, since a small intrahepatic abscess had been opened by an incision; however, since the liver was extremely enlarged, it seems more than probable that there were abscesses present other than the one (no larger than an egg) which had been opened, and yet the patient, after a prolonged period of convalescence, finally recovered.

In the second case only an exploratory incision was made, which showed an enormously enlarged liver with numerous abscesses situated on its external surface. The incision was closed without further interference. This patient also recovered, although for a number of months he presented fever and other signs of general infection.

These two cases prove that post-appendicular suppurative hepatitis is not always a fatal complication, and that recovery may occur spontaneously. The operations which were performed in Hellström's two cases were absolutely insufficient to explain recovery. These facts, together with those already published by Treves and Koerte, give occasion for reflection to those who publish cases of recovery "due to operation" for suppurative hepatitis with multiple foci.

EUGENE S. TALBOT, JR.

#### **Lotheissen: Tuberculosis of the Liver and Its Surgical Treatment** (Ueber Lebertuberculose und deren chirurgische Behandlung). *Beitr. z. klin. Chir.*, 1912, lxxxi, Nov. By Surg., Gynec. & Obst.

Liver tuberculosis demands more attention on the part of the surgeon. Certain forms offer promises of good results by surgical interference. Simmonds found the liver involved in 82 per cent of autopsies performed upon 476 tubercular persons. Conglomerate tubercles were present in but 2 of these cases. Zehden (Moabit) observed liver tuberculosis in 50 per cent of his autopsies. Elliesen (Erlangen) found 4 cases of solitary tubercle in 460 cases, but considers this number too low, and thinks it includes only those cases where the tubercles were macroscopically visible. Suzuki examined 70 cases (Würzburg Pathological Institute), and found upon microscopical examination miliary tubercles in 44 cases. In 25 of these the tubercles could be discerned macroscopically. Zehden is of the opinion that the miliary tubercles are the result of a rapid infection occurring shortly before death, due probably to a cessation of the physiological forces which ordinarily are powerful enough to resist dissemination of tuberculosis in the liver.

Another form of liver tuberculosis is characterized by the formation of large cheesy nodules. This form has been described by Hesch, Birch-Hirschfeld, and others. The nodules arise from the interlobular connective tissue, because here the tubercle bacillus finds favorable conditions for development. By confluence they may attain a size from that of a hazel-nut up to that of a fist. The nodules may be single or multiple. In cattle this form of conglomerate tubercle is found more frequently than in man. The process may lead to abscess formation within the liver or its vicinity. Both groups have some points in common, but are best considered separately. Lotheissen has collected 34 cases of the first group and 13 of the second. Each group contains one of his own cases.

1. *Conglomerate tubercle.* Man, 24 years of age, had typhoid 5 years ago. In 1909 cough, fever, pains on right side; operated upon for empyema.



Later he had a recurrence of the fever; this persisted up to the time of admission. The patient had two fistulae in the eighth intercostal space on the right side. Both discharged copiously; the discharged material resembled that from a tubercular cavity.

The excursions of the right side of the thorax were less than of the left. An area of dullness began two finger-breadths above the right nipple and extended two finger-breadths below the costal arch. It was continuous with the liver dullness and changed with respiration. Rough breathing could be heard over the apices, but no breath sounds were perceived over the area of dullness, which passed horizontally from before backward. Typical night sweats. X-ray showed the following: Both upper lobes were filled with numerous shadows the size of a pea or bean; some appeared to be calcareous. The glands at the hilus were enlarged on both sides, infiltrated, and some were calcareous. The right side of the diaphragm moved but slightly. Patient complains of pains in the right side, both spontaneous and upon deep inspiration. Localization of the pain is indefinite—at times at the costal arch and again in the parasternal line. Ten cm. of the seventh and eighth ribs were resected and an abscess cavity about the size of a silver dollar and 2 mm. in height exposed. The inner wall was formed by the diaphragm. By splitting this a cavity the size of two fists was discovered. It was situated in the liver and filled with cheesy detritus. Microscopical diagnosis was chronic tuberculosis. The wound discharged bile for some time. Later the fever returned, necessitating a second operation. Four ribs were found to be carious, and a second large abscess cavity was discovered. Rib resection and evacuation of the cavity were done. Patient began to improve markedly, but later suffered again from a return of symptoms, which led to the opening of another cavity. A fourth interference became necessary to remove another conglomerate tubercle. After that permanent improvement followed. The wound closed and the apical tuberculosis improved.

2. *A case of subphrenic abscess.* Woman, 61 years of age. Three years ago she had an attack of pleurisy. She has now a tumefaction at the right costal arch. The tumor fluctuates. An incision parallel with the costal arch was made and pus evacuated. No cavity could be discovered in the liver. Above, the finger entered the pleural cavity through an opening in the diaphragm. The pus was sterile. Signs of tuberculosis were found in the right lung. Tamponade of the abscess cavity was followed by recovery.

This case and one of Langenbuch do not show the definite origin of the process from the liver, but tally so well with the other cases collected that Lotheissen does not hesitate to place them in this class. Infection takes place by the blood stream in the majority of cases. The primary focus of infection may be found in a cheesy bronchial lymph gland. Infection from intestinal ulcers is hardly

to be considered in the surgical form of tuberculosis. Foci in the lung occur in a large number of cases. The right lobe of the liver seems to be involved preferably. The nodules usually are well circumscribed and may even be shelled out. Bacilli can seldom be demonstrated in the lesions. The walls of the cavities differ from those of ordinary or of tropical liver abscess. In the latter the cavity resembles that seen in gangrene of the lung. It is difficult to differentiate the conglomerate tubercle at times from sarcoma or carcinoma. Gumma of the liver is less clearly defined, above all much richer in connective tissue, and the central portions frequently show scar formation. The center of a tubercular nodule shows the largest amount of softening. If the tumors are situated superficially they may protrude above the surface of the liver, but as a rule adhesions with adjacent organs are formed. These adhesions are the result of a local tubercular peritonitis; general tubercular involvement of the peritoneum seems to be infrequent. Dissemination of tubercles upon the lower or upper surface of the diaphragm is not infrequent, leading in the latter case to development of a tubercular diaphragmatic pleurisy. This may cause a saccular empyema.

The symptoms of tuberculosis of the liver are vague. Of the 47 cases collected by Lotheissen, 23 presented no sign of involvement of any intra-abdominal structure; 15 were operated on, and only in 3 of these a correct diagnosis was made before the operation. A tumor at the costal arch was observed in 14 cases; in 8 of these fluctuation was present, due to a subphrenic abscess as proven by operation. A solid tumor connected with the liver was present in 5 cases. It seems that localizing symptoms appear only when the process had reached the serosa. Pain may be present in the side or may be felt as a continuous dull girdle pressure, the same as is found in diaphragmatic pleurisy. Cough and dyspnoea may accompany the pain. While the tubercular process is confined to the interior of the liver, the symptoms are chiefly those of gastrointestinal disturbances. Tuberculosis of the liver leading to the formation of large nodules should be treated surgically.

At times a simple laparotomy seems to produce marked improvement. Hanot and Gilbert point out that healing may occur by cirrhotic changes. These may be favored by a laparotomy. As a rule, however, more radical interference is preferable. Isolated nodules may be treated by cuneiform excision, with preliminary placing of catgut sutures. Larger or multiple nodules require regular resection; here preventive hæmostasis by intrahepatic ligature after Kusnetzoff and Peusky is to be used. Ligation of a branch of the hepatic artery may be of great service in resection of an entire lobe. Ransohoff employed resection by the two-step method. This seems to have been accountable for the unfavorable result. Twenty-four hours after the placing of an elastic ligature and delivery of the tumor from the wound a severe hæmorrhage set in, necessitating



removal of the tumor with the cautery. The patient died six days later from a necrosis of the gastric mucous membrane. Lotheissen favors curettement after ample exposure of the focus. Hæmorrhage is not very marked. The cautery may be used in addition to reach the deeper tissues. In the after treatment he considers swabbing with tincture of iodine to be of great importance. In cases of coexisting empyema, transpleural approach is the best. Exploratory incision should not be delayed too long in doubtful cases. Recovery from tuberculosis of the liver may be expected (1) if treatment is instituted early; (2) if the patient is young as he has greater power of resistance; (3) if the operative procedures are not too severe.

E. C. RIEBEL.

**Tuffier: Non-Parasitic Cyst of the Liver (Biliary Angioma)** (*Kyste nonparasitaire du foie: angiome biliaire*). *Bull. c. mém. d. l. Soc. d. Chir. d. Paris*, 1912, xxxviii, 1252. By Journal de Chirurgie.

Last November Tuffier had occasion to operate on a young man 25 years of age who had consulted him regarding a voluminous abdominal tumor, the existence of which he had first noticed about two and a half months before. The tumor, the size of two fists, was not accompanied by any hepatic disturbances, and had discommoded the patient only because of its size. It presented all the characteristics of a hydatid cyst of the liver (there was no hydatid thrill, but the deviation of the complement was positive), and accepting this diagnosis, Tuffier intervened. When the abdomen was opened he perceived that the whole lower portion of the right lobe of the liver was occupied by a fluctuant, multilobular tumor which looked like a polycyst; when punctured at various points it gave forth a liquid which was sometimes clear, sometimes biliary, sometimes dull, dark-colored. The other portion of the right lobe and the left lobe of the liver appeared absolutely healthy, as did the right kidney. Without causing any great loss of blood Tuffier was able to remove this tumor from the parenchyma of the liver, from which it was marked off not by any fibrous membrane but by a condensed hepatic tissue. The loss of substance was repaired by drawing the healthy tissue together by means of heavy catgut, drawn moderately tight. The patient recovered without any accidents. Tuffier saw him again during the last few days, and found him in perfect health.

The principal interest of this case lies in the histological examination of the tumor.

The tumor was formed of multiple cavities, each completely isolated from the other. The majority of them contained a liquid which was plainly biliary; but some of them contained a liquid which was clear, rich in albumin, or containing, on the other hand, a liquid which was dull, puriform and of a chocolate color. The wall of the cyst was formed of fibrous tissue and on the inside was lined with cylindrical or cubic cells which resembled the cells

of the biliary duct. In the intercystic partitions atrophied hepatic tissue was found. J. DUMONT.

**Syms: Gallstones.** *N. Y. M. J.*, 1912, xcvi, 933. By Surg., Gynec. & Obst.

The chief etiological factors in the production of gallstones are infection and inflammation. These two bring about the final causes, namely, change in the character of the bile and stagnation of the flow of the bile.

There is a close association between the liver (with its biliary system), the stomach and intestines, and the pancreas. These organs are associated embryologically, histologically, physiologically, and pathologically. Disease or inflammation of any of these organs may become a factor in the production of gallstones.

The serious lesions and complications which are caused by gallstones are only found in a more or less advanced stage of the disease. The early pathology of cholelithiasis is simple; the late pathology is complex. Therefore early operations may be simple in their nature and will be almost certain of cure. On the other hand, delayed operations must usually be of a complicated character, with more risk to the patient and with less certainty of cure. Gallstones tend to the production of cancer. Cancer of the gall-bladder is practically always preceded by gallstones.

In some cases the classic text-book picture is presented, and diagnosis is obvious. In most cases the symptoms are mild and more or less vague, and diagnosis is not easy.

Operation is the only treatment for gallstones, and it is always indicated when the diagnosis can be made, and often when the diagnosis must be assumed. Early operation is not dangerous. Delay in operation is dangerous. The death rate in biliary surgery bears a distinct relation to the period of the disease.

As gallstones are dependent upon infection, drainage is of the utmost importance. It should be a routine procedure and should be continued until clear bile flows. Cholecystenterostomy is an important procedure. The gall-bladder should be preserved unless there is strong reason for its removal.

The author's reasons for the removal of the gall-bladder were misstated, owing to a typographical error.

**Clark: Gallstones Coincident with Other Surgical Lesions.** *J. Am. M. Ass.*, 1912, lix, 1587. By Surg., Gynec. & Obst.

Clark reports the histories of 86 cases of cholelithiasis found coincident with some pelvic lesion for which the operation was primarily performed. He especially draws attention to the fact that the gynecologist must be ever on the alert to differentiate between symptoms referable to the pelvic organs and those which hitherto have largely been considered reflex. In the majority of these cases in which



reflex symptoms appear to be dominant, the real cause has usually been found in the organ from which they emanate, and therefore are not reflex, but arise from definite local pathological changes.

In his series of over 100 cases of cholelithiasis with operation, in various hospitals, coincident with some other primary lesion for which the patient was admitted to the hospital, there were only a very few in which there was not more or less direct physical disturbance, ranging from the classical attacks of colic to the less direct symptoms of indigestion, etc. Thus, in 86 cases under immediate review, from his service in the University Hospital, 39 gave a history of unmistakable gallstone attacks. In 14 the patients complained of indigestion, a term which encompasses such symptoms as gaseous eructation, sour stomach, heaviness after eating, vague distress in the epigastrium, etc.; in 7 there was pain in the dorsal region posterior to the gall-bladder; in 2 the symptoms were questionable; and in only 19 were there no symptoms which could be attributed to the cholelithiasis. The conditions for which the primary operation were performed varied quite widely. The commonest coincidence was gallstones and myoma uteri, there being 27 such associated cases. The remainder were distributed as follows: Retroflexion of uterus, 13; relaxed pelvic floor, 9; ovarian cyst, 6; umbilical hernia, 7; salpingitis, 7; appendicitis, 4; movable kidney, 1; uterine polyp, 1; prolapse of uterus, 1; hæmorrhoids, 1; metritis, 2; pyosalpinx, 1; intestinal adhesions from former peritonitis, 3.

In this series there was one death from cholemia in a common-duct case coincident with a large ventral hernia. Argument against the removal of the stones as being unnecessarily dangerous, therefore, in the face of the small mortality is hardly necessary to sustain the combined operation.

The contraindications to the examination of the upper abdomen, as observed in his clinic in the University Hospital, were: (1) In the event of a liberation of pus in the pelvic or lower abdominal cavity, the hand should never be passed from a septic to a non-septic area. (2) When the incision is too small to admit the hand, and there are no symptoms to cause suspicion of cholelithiasis, the examination of the gall-bladder is omitted. (3) When the patient is not taking the anæsthetic well and a prolonged anæsthetization and further manipulation of the viscera would be immediately harmful, the gall-bladder is left untouched.

In the presence of a lesion inevitably fatal, as inoperable carcinoma of the gall-bladder, etc., the stones are not removed, as the operation would only add to the immediate discomfort of the patient with no hope of any permanent good.

In conclusion, he states some of the facts worthy of special attention as follows: (1) Gallstones give rise to symptoms in a much larger proportion of cases than is commonly supposed. (2) Many cases heretofore diagnosed and treated as "chronic indigestion" and other vague stomach disorders are

in reality cases of cholelithiasis. (3) Gallstones are not necessarily innocuous when they are producing no symptoms, but may produce fatal lesions while their presence is unsuspected. (4) Unless contraindicated, the gall-bladder as well as the appendix should be examined in all cases of coeliotomy, and gallstones, if present, should be removed whether they offend or not, provided the patient's local and general condition is favorable.

**Gerster: Unsuccessful Surgery in Disorders of the Gall-Ducts, Together with a Consideration of Naunyn's Cholangitis.** *Surg., Gynec. & Obst.*, 1912, xv, 572. By Surg., Gynec. & Obst.

In this article the author explains that by normal bactericholia is meant the presence of micro-organisms in the bile of the duodenal portion of the common bile duct, while, in contrast to this, bacterial infection of the bile consists in the dangerous accumulation of organisms following relative or absolute stagnation in the bile passages.

The infection may either be of enterogenous origin (*B. coli*) or of hæmatogenous origin (as in typhoid, pneumonia, severe sepsis, etc.).

Attacks of paroxysmal pain, fever, jaundice, and swelling of the liver and evidences of the cholangitis (inflammatory swelling of the basal membrane and epithelial layer of the smallest bile ducts) present, not of impaction of stone, as proven by those cases with the above symptoms in which inflammation but no stones were found at operation or autopsy. In other words, the clinical symptoms are the same whether or not stones are present. "Everything which relatively or absolutely obstructs the expulsion of bile will cause persistence of cholangitis and of biliary disturbances."

Important intrinsic causes of relapse are: (a) Stricture or kinking of the common duct; (b) the leaving behind of undetected stones.

Palpation of the unopened common duct is inadvisable because of the possible displacement of stones into the hepatic duct. The common duct should first be opened and drained; palpation then is easier and more reliable, and dislodgment of stones toward the liver is less apt to occur.

Gerster reports five cases of relapse of cholelithiasis in which cholecystectomy had previously been performed; in all five the common duct was easily exposed at the second operation.

The author believes that a damaged gall-bladder not only is of no use as a guide to the common duct, but that "the presence of an infected gall-bladder will produce close, extensive, and very troublesome adhesions, which do not yield to blunt dissection but require the perilous use of sharp-edged instruments" for exposure of the common duct.

As regards treatment, "having once acquired the conviction that the fundamental factor of biliary colic and hepatic fever is infection of the bile, causing inflammation of the walls of the bile duct, then incision, drainage, and irrigation may be accepted as necessary steps of a rational treatment."



The conclusions reached are as follows:

1. Every dilated common duct should be opened and drained.
2. Palpation should follow, not precede, incision of the common duct.
3. An inflamed, thickened, adherent, or shrunken gall-bladder should be removed.
4. All cicatricial deposits in the gall-bladder or in the cystic duct justify removal of the gall-bladder.
5. The presence of many small stones, even though the cystic duct is patulous, indicates that the gall-bladder should be removed.
6. The presence of a damaged gall-bladder is not an aid, but an impediment to exposure of the common duct.
7. Absence of the gall-bladder does not constitute an important adverse factor in the subsequent exposure of the common duct.

**Sugi: Stenosis of the Bile Ducts in the Newborn**  
(Ein Beitrag zur Frage der Gallengangstenose beim Neugeborenen). *Monatschr. f. Kinderh.*, 1912, xi, 294.  
By Surg., Gynec. & Obst.

Sugi reports a case of stenosis of the bile ducts in a child who was brought to the clinic for treatment of umbilical hæmorrhage when two weeks old. It had no icterus at that time. The child died with symptoms of hæmorrhagic diathesis when three weeks old. Autopsy showed suffusions of the skin, the umbilicus, and pleura, ecchymosis of the thymus, the testes, epicardium, and the mucosa of the digestive tract, with severe icterus of the liver as a result of stenosis of the ductus hepaticus and its two main branches. The stenosis was of inflammatory origin and the resulting granulating tissue infiltrated mainly the outer layers of the large bile ducts. It was rich in eosinophiles and plasma cells; the walls of the macroscopically unchanged ductus choledochus were permeated by these cells. The gall-bladder, however, showed no such changes and only certain macerated spots. The same process was found to a slighter degree in the liver, being almost exclusively around the head of the pancreas. There was no epithelium in the ductus hepaticus, and only remnants in the ductus choledochus, but it was found everywhere in the bile ducts of the liver.

The stenosed parts had been frequently sounded, and this may explain the absence of epithelium, but it must be admitted that it may have resulted from the inflammatory process. In this case we have a cholangitis and pericholangitis, while the portal vein, the arteries of the liver, and the vena umbilicalis were free from lesions. Spirochetes or bacteria were not found. There were no specific symptoms and nothing in the histological findings to allow a diagnosis of lues.

E. S. TALBOT, JR.

**Upcott: Tumors of the Ampulla of Vater.**  
*Ann. Surg., Phila.*, 1912, lvi, 710.

By Surg., Gynec. & Obst.

Two cases of tumors occurring in the ampulla of Vater are reported. Both were in men, aged 63 and

65 respectively, and in each the symptoms were similar; i.e. gradual appearance of jaundice which persisted, absence of pain, marked loss of weight, enlargement of the liver, and a distended and easily palpable gall-bladder.

In both cases the tumor was discovered upon opening the abdomen, as a hard, irregular nodule, situated upon the posterior surface of the duodenum.

After mobilizing the duodenum by incising the peritoneum upon its outer side, it was drawn forward and opened by a transverse incision, and the nodule pushed forward into the wound.

In the first case there was no attempt made to remove the growth, and a palliative operation of cholecystoduodenostomy was performed; this relieved the condition for about one year, when obstruction of the pylorus ensued, necessitating a posterior gastro-enterostomy; subsequently the symptoms of pancreatic insufficiency increased, and the patient died twenty months after the primary operation.

In the second case, the greatly distended gall-bladder was opened and six stones removed from the cystic duct; through a transverse incision in the duodenum, the mucous membrane around the tumor was incised and the latter was then drawn forward and cut away.

As the common duct was divided, there was an escape of turbid mucus, and a small unfaceted stone was removed from its upper end.

The lower end of the common duct was sutured to the mucous membrane of the intestine. As the cut end of the pancreatic duct could not be found, the lower portion of the wound in the intestine was not closed.

The transverse opening in the duodenum was sutured, the gall-bladder drained, and the abdomen closed. The microscopic examination showed the growth to be a columnar celled adenocarcinoma.

From the examination of the urine and fæces in the first case it was thought that there was a partial obstruction to the bile entering the intestine and also an interference with the function of the pancreas; the latter might be produced either by malignant disease or by cirrhosis of the pancreas.

Upcott states that an exact diagnosis will rarely be made; the commoner cause of biliary obstruction and chronic inflammation of the pancreas are apt to be associated with pancreatic insufficiency.

He also points out that the duct of Santorini may open separately into the duodenum above the ampulla, and in this way drain the duct of Wirsung.

He suggests that it may be wise to relieve the condition of jaundice by one of the palliative operations — a cholecystostomy, a cholecystenterostomy, or by a choledcho-enterostomy — and leave the more radical operation of removal of the growth until a later date.

The radical operation may be done by a circular resection of that part of the duodenum, followed by an anastomosis or a closure of the divided ends of the



intestine, and a gastro-enterostomy, with implantation of the ducts into the intestine, or a cystenterostomy.

The simpler operation is advised, for most cases, of removal through the transverse incision in the duodenum, which was made use of in his second case.

D. L. DESPARD

**Chiarugi: Pancreatic Steatonecrosis in Acute Traumatic Pancreatitis** (Steatonécrose pancréatique en pancréatite aigue traumatique). *La Clin. Chirurgica*, 1912, Oct., 1853.

By Journal de Chirurgie.

A patient 35 years old was struck on his abdomen by a heavy barrel. There were immediate symptoms of severe abdominal injury. On succeeding days there was present a loss of appetite with nausea, at night slight elevation of temperature, sensation of cold in the epigastric region and lumbar pain. At the end of a month the patient appeared cured and resumed work, but experienced a sensation of extreme lassitude and noticeable loss in weight, the weight falling from 65 to 56 kilos. Twelve months after the accident the patient, without any appreciable cause, had an attack of colic, meteorism, pain in the periumbilical and right hypochondriac region. This attack subsided after purgation and evacuation and the weight continued to decrease to 46 kilos. Two months later there was intense pain in the epigastric region, with vomiting, cold sweats, and fever. Three months later, the patient's pulse was very weak; had cold sweats and peripheral cyanosis. Respiration was frequent and of the superior costal type. The abdomen was distended, especially in its upper portions, the volume of which contrasted with the marked emaciation of the limbs. This area continued immobile during respiration and transmitted the pulsations of the aorta; the parietal muscles were contracted and there was extreme tenderness in the epigastric region 2 or 3 cm. above the umbilicus, upon the median line. There was an area of dullness between the stomach and the colon extending from the left border of the sternum to the right mammillary line.

The author, basing his opinion especially upon the history and upon the integrity of all the abdominal viscera but the pancreas, made a diagnosis of traumatic pancreatitis with steatonecrosis. He deemed it urgent to intervene. Spinal anæsthesia; a right paramedian supraumbilical incision. The parietal and visceral peritoneum were opaque and markedly congested. One could see and palpate a foetal-head-sized tumor immediately below the great curvature of the stomach in the pyloric region.

This slightly fluctuating tumor was covered by the gastrocolic ligament and the transverse colon, which were adherent to it. The adhesions were separated, the gastrocolic ligament incised, and the head and body of the pancreas exposed. They formed a necrotic, brownish, friable mass. This necrotic mass was gently evacuated and, owing to the fear of hæmorrhage, capillary drainage was used. The wound was left widely open. Following the operation the temperature had the suppurative type. Necrotic fragments were eliminated, as well as an abundant quantity of limpid, gluey, alkaline fluid, which had the same action—carbohydrates, albuminoids and fats—as pancreatic juice. At the end of three months there was spontaneous closure of the pancreatic fistula. The patient regained in weight, weighing now more than ever—70 kg. 6. Histological examination of the fragments collected at the time of operation and in the course of elimination of the necrotic mass confirmed the diagnosis.

PIERRE FREDET.

**Mayesima: The Value of the Cammidge Reaction in Diseases of the Pancreas** (Ueber den Wert und das Wesen der Cammidge'schen Reaction bei Pankreaserkrankungen). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 403.

By Surg., Gynec. & Obst.

The author reports the following results from experiments with the Cammidge reaction. The urine of rabbits and dogs which had been previously injected with from 5 to 15 cc. of 10 per cent camphorated oil solution, and into the stomachs of which 5 cc. of a 20 per cent choral hydrate solution had been placed, was treated with tribasic acetate of lead, as indicated by Cammidge; the clear filtrate of this showed a strong Cammidge reaction. Then 25 gm. of pure glucurovanillin acid barium were dissolved in 100 cc. distilled water and mixed with tribasic acetate of lead, and the filtrate of this freed from superfluous lead by addition of sodium sulphate; this solution was then heated with acetic acid of hydrazin of phenol and gave a yellow crystalline sediment identical with that of Cammidge. Pure glucuron acid, 25 gm., was dissolved in 40 cc. normal urine, which did not give Cammidge reaction; the urine treated in the same way as above gave the typical Cammidge reaction. A solution of glucuron acid potash in water gave also a beautiful Cammidge reaction. The latter is of no diagnostic value in diseases of the pancreas. The crystals gained in the experiments were not always of the same chemico-physical quality; the matrix for the orazon crystals can therefore not be of uniform nature.



## SURGERY OF THE EXTREMITIES

## DISEASES OF THE BONES, JOINTS, ETC.

**Barrie: Chronic (Non-Suppurative) Haemorrhagic Osteomyelitis.** *Post-Graduate*, 1912, xxvii, 1049.  
By Surg., Gynec. & Obst.

The author describes a lesion occurring in the ends of the long bones, variously designated as (a) medullary giant cell sarcoma, (b) myelogenous giant cell sarcoma, (c) myeloma, and (d) medullary giant cell tumor (Bloodgood). The writer contends that these names are misnomers in that the condition is the product of a chronic inflammatory process and not a true neoplasm. He prefers the name chronic (non-suppurative) haemorrhagic osteomyelitis.

The process is supposed to begin as a result of trauma causing bruising of the capillaries in the bone with transudation and haemorrhage, followed by destruction of the bony canals from pressure necrosis. A low grade irritation or inflammation follows which results in excessive production of vascular granulation tissue springing from the reticulum of the bone marrow.

The point upon which the diagnosis of malignant growth has been made is the presence in this tissue, which is infiltrated with small round and epithelioid cells, of numerous giant cells. These the author regards not as tumor cells, but merely as foreign body giant cells or scavengers, whose function it is to remove the debris produced by the low grade inflammatory condition in the bone.

The gross appearance of the fresh specimen is said to be typical—very vascular, deep red granulation tissue without supporting fibrous structure. The cut surface has a velvety appearance, oozes freely, and shows numerous small hyaline thrombi and recent blood clots in the smooth, somewhat myxomatous mass. In the later stages the tissue may become converted into fibrous tissue of grayish appearance, with or without cystic areas, giving the appearance of so-called ostitis fibrosa.

The X-ray shows the lesion clearly circumscribed though somewhat irregular in outline, indicating total bony destruction of the cancellous tissue. In diagnosis important points are: history of trauma, chronicity (months or years), tenderness from onset and pain usually not marked until noticeable swelling, age (childhood or young adult life). Operative treatment should be limited to simple removal with the curette of the excessive granulation tissue and inflammatory debris, followed by transplantation of bone to fill the cavity, as advised by Bloodgood, or firm packing. Amputation without real evidence of sarcomatous degeneration is uncalled for.

F. J. GAENSELEN.

**Elmslie: Fibrous and Fibro-Cystic Osteitis.** *Brit. M. J.*, 1912, November, 1367.

By Surg., Gynec. & Obst.

The author states that too often bone cysts are mistaken for sarcomata and amputation performed.

He mentions several varieties: (1) Localized fibrous osteitis; (2) localized fibrocystic osteitis; (3) generalized fibrocystic osteitis (von Recklinghausen's disease); (4) cystic osteitis. As far as can be ascertained, the condition always starts in childhood or adolescence. Cysts usually occur in the femur, humerus, tibia, and fibula, arising near the epiphyseal lines. They most often produce no symptoms until spontaneous fracture occurs, being painless in their course. Enlargement of the bone may lead to medical advice being sought. Beyond the opinion that fibrous osteitis is an inflammatory lesion nothing is known of its pathology. The important feature in treatment is that it must be strictly conservative—curettage, crushing of the cyst wall, or resection of the affected portion of the bone are the measures usually advocated. Elmslie reports five cases—three in the humerus, all males, 7, 9 and 14 years; one in the femur in an adult female (in this case a history dating from the age of 15 was obtained); and one case in the tibia, in a boy of 10.

M. S. HENDERSON.

**Morton: Arthritis.** *Proc. Roy. Soc. M.*, 1912, vi, 1.  
By Surg., Gynec. & Obst.

This article is written chiefly with the idea of differentiating between rheumatoid arthritis and arthritis deformans. The former the author regards as an intoxication caused by a toxin produced by bacteria. In distinguishing the conditions he notes that osteophytes are rare in rheumatoid arthritis, and when present occur at the extreme end of the long bones, where there is an absence of the articular cartilage. The production of bone is of very elementary character, and we therefore have in rheumatoid arthritis a disease which is characterized essentially by the destruction of joint tissues with the production of osteophytes of secondary importance.

In osteo-arthritis (arthritis deformans) we have a condition in which the joint spaces are narrowed or partially so and the spaces between the articular ends are more or less even, while the formation of osteophytes is quite marked. A distinction between these two conditions can usually be made very well by the use of the X-ray. As to electrical treatment of this condition, Morton thinks that ionization offers the best chances for benefit. C. G. GRULEE.

**Ely: The Etiology of Chronic Non-Tuberculous Arthritis, the Miscalled Arthritis Deformans.** *Am. J. Orthop. Surg.*, 1912, 171.

By Surg., Gynec. & Obst.

Ely reviews the evidence for and against the infectious theory of the cause of the various types of so-called rheumatoid arthritis. He calls attention to the three theories most prominently advanced to account for these joint lesions, viz.: (1) That they are due to some derangement of the central nervous system which manifests itself through the trophic



nerves of the joint; (2) that they are due to faulty metabolism (autointoxication); (3) that they are distinctly infectious.

He points out as evidence in favor of the last theory that "every bone and joint disease whose exact cause we know is infectious." "Numerous observers have isolated pure cultures of micro-organisms from these chronically diseased joints, and in some instances have produced the disease by injection into the joints of animals."

He admits that the organisms found by one observer appear to differ from those found by others, but says "it is perhaps better for the present to believe that a number of different organisms may be responsible for these diseases, especially as this agrees with clinical evidence."

Regarding the nervous theory he says, "As far as we can ascertain, no proof exists that a lesion of the central nervous system can cause changes in the body tissues comparable to those found in the joints in chronic arthritis."

In discussing Charcot's joints, which are advanced by some writers in support of the nerve theory, he says, "When two lesions are sometimes found together and sometimes separately, we conclude that one is not caused by the other but that both are caused by something else"; and "here we are using for illustration a joint lesion about whose nature we are quite ignorant, and for whose occurrence no satisfactory explanation has ever been adduced. Let us rather regard a Charcot joint as a late manifestation of the toxins of syphilis upon the bone marrow, as we regard tabes as a manifestation of it upon the spinal cord."

He argues that degenerations are the result of infections, that degeneration in one tissue often follows inflammation in others, and that the primary inflammation is infectious.

Attention is called to the fact that many of these chronic joint changes are associated with infections elsewhere, as in the tonsils, mouth, ear, or nose, and that when the infection is removed the joint disease stops.

The analogy existing between chronic non-tuberculous joints and the tuberculous ones is pointed out. The writer quotes from a number of other authors and refers to many published articles in support of his opinion that these various forms of chronic joint disease will eventually be found to be infectious.

J. L. PORTER.

**Lapointe: Etiology and Treatment of Traumatic Myosteomata** (Pathogénie et traitement des myostéomes traumatiques). *Rev. de Chir.*, xlviii, Nov. 1912, 657. By *Journal de Chirurgie*.

Lapointe reports a case of myosteoma of the crural muscle in a patient 21 years of age, operated upon and cured. There are two hypotheses as to the origin of these new formations. The first looks upon the periosteum as being directly or indirectly the source of ossification. The second, considers the process an ossifying myositis. The author does

not accept the theory of the irritative hypertrophy of aberrant sesamoid bones nor does he accept the theory of latent embryonal germs. Therefore, if ossifying myositis is true for the free and discontinued myosteomata, it must be also true of adherent myosteoma. Adhesion of itself does not constitute a sufficient argument to establish a different origin for new formations that are absolutely identical in structure. From these myosteomata must be separated traumatic exostoses, exclusively and truly periosteal in formation but which outside of contiguity have no relation with neighboring muscles. You cannot say either that these so-called chronic myosteomata are due to slight irritation of partially or completely detached periosteal flaps. Neither are myosteomata due to escape into the muscles through a periosteal fissure of cells of the internal layers of the periosteum. This theory does not rest upon any observed facts nor upon the normal anatomy of the osteomuscular continuity at the site of the insertions. Recurrence of myosteomata do not occur always at the point of pedicle implantation. In fact, it seems that these myosteomata have a matrix of muscle connective tissue, and the skeleton attachment shows only that the traumatic etiological factors have attacked at the same time the fleshy body of the muscle and its insertions.

The prophylaxis of these tumors is uncertain because cases which have been chosen to show the favorable and unfavorable influence of massage have been cases which were comparable. The efficacy of conservative treatment is more apparent than real, and is explained by the spontaneous regression of the ossifying processes, which permit, with time, sufficient functional recovery, especially in myosteomata which are not periarticular.

Extirpation is the treatment of choice, but it should not be too early. Six or eight weeks of expectant treatment is a fair average. When to the myosteoma is added an ossifying peri arthritis and a persisting and grave disability results, and orthopedic resection should be considered.

J. OKINCZYC.

## FRACTURES AND DISLOCATIONS

### Symposium on Treatment of Simple Fractures.

*Brit. M. J.*, 1912, Nov., 1505.

By Surg., Gynec. & Obst.

In the report of the committee of the British Medical Association an attempt is made to compare the results in operative and non-operative cases. The statistics relative to the non-operative treatment of fractures of the shafts of the long bones in children under 15, with the exception of fractures of both bones of the forearm, show as a rule a high percentage of good results. The operative results in children expressed in percentages are approximately the same as the non-operative — non-operative (1017) cases give 90.5 per cent good functional results; operative (64) cases give 93.6 per cent. There is a progressive depreciation of the functional result of non-operative



treatment as age advances; that is, the older the patient the worse the result by the non-operative method. In nearly all age groups operative cases show a higher percentage of good results than non-operative cases. Operative treatment should not be regarded as a method to be employed in consequence of the failure of non-operative measures. In order to secure the most satisfactory results from the operative treatment, it should be resorted to as soon after the accident as practicable. Operative measures are to be undertaken only by those skilled in this line of treatment. A considerable proportion of failures is due to infection. The mortality due directly to the operative measures is so small it cannot be urged as a contraindication. As a basis for the report, nearly 3000 cases were examined personally by two or more members of the committee. The number of operative cases is proportionately small, there being 208 cases examined. Examinations of patients in the clinics of A. Lambotte, W. Arbuthnot Lane, Lucas, Championnière, Steinmann, Bardenhauer, etc., were made, thus representing different schools of treatment.

M. S. HENDERSON.

**Salmon: Fractures of the Upper Extremity of the Tibia.** *Arch. f. klin. Chir.*, 1912, xcix, 965.  
By Surg., Gynec. & Obst.

The author reports 7 cases of fracture of the upper extremity of the tibia. Twice the fractures were transverse, twice oblique, twice longitudinal, and once a fissured fracture.

The transverse fractures most frequently are consequent upon direct traumatism, although they may result from indirect violence; in the latter case the upper fragment is flexed and the lower is in extension. The upper fragment frequently is fissured. Longitudinal fractures generally are produced by an indirect trauma. The separation of the upper epiphysis of the tibia is observed exclusively in young subjects. It is associated with a

permanent dislocation of the knee joint. After reviewing the etiology and the prognosis of fractures of the upper extremity of the tibia, the author considers their treatment. In those cases, when the reduction is difficult he favors immobilization of the fragments in a plaster cast, with the leg flexed toward the thigh. Early passive motion and massage is advocated. The average time required for cure is from six to eight weeks. E. S. TALBOT, JR.

**Gerster: The Reduction of the Fragments in Fractures of the Long Bones.** *Ann. Surg.*, Phila., 1912, lvi, 769.  
By Surg., Gynec. & Obst.

Two sets of instruments are described; both were designed to reduce the overriding of the bony fragments in fractures of the long bones.

The chief instrument of the first set consists in a tractor (Fig. 1). The point of a hook at the end of a piece of bicycle chain is inserted into the medulla of one fragment, the chain leads over the end of the other fragment and over an idler wheel set in the end of a steel bar (here the chain changes its direction at a right angle), back to and over a sprocket wheel. As the chain tightens, by rotating the sprocket, one fragment is pulled up, as the other fragment is pushed down, until finally both come into line. Although it has been used with complete success, this method has the following disadvantages; (1) Tractor and fragments must constantly lie in the same plane; (2) the narrow hook often cuts through the bone, like a cranial rongeur; (3) after reduction, the instrument lies wedged between the fractured ends and its proper removal is difficult.

The second set of instruments consists of two strongly made Bowman clamps and a turnbuckle (Fig. 2). A Bowman clamp is applied to each bony fragment and the turnbuckle engages the shafts of the clamps; as the barrel of the turnbuckle is rotated, the clamps and the bones to which they are fastened are forced apart.

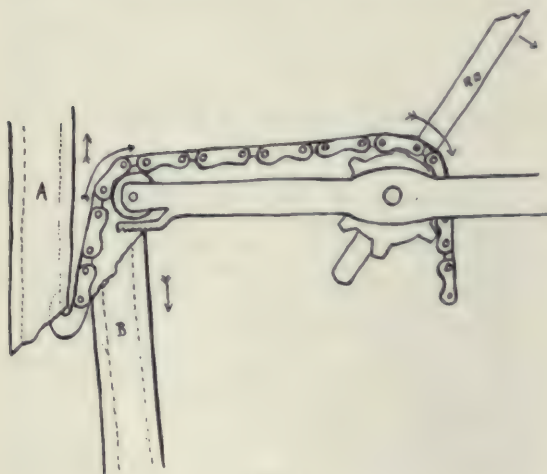


Fig. 1.

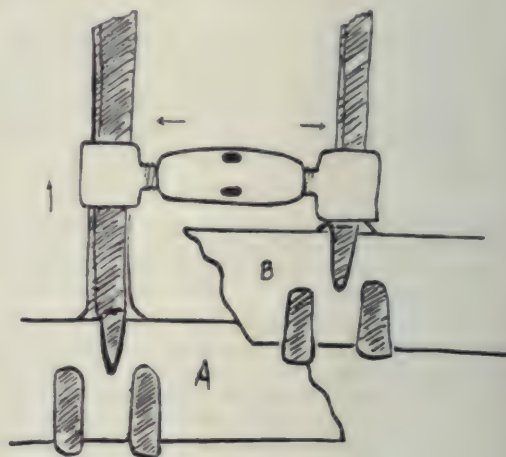


Fig. 2.



The turnbuckle and clamp method has none of the disadvantages of the tractor described above. This second method can be of most effective use in plating comminuted fractures — where the tractor cannot be used. The only danger attending the turnbuckle method is the possible employment of too great force in old fractures where the soft parts have contracted a great deal.

**Knox and Salmond: An Analysis of Injuries to the Bones at the Wrist, Based on the Radiographic Examination of 214 Cases.** *Lancet*, 1912, ii, 1213. By Surg., Gynec. & Obst.

This paper is based on a careful examination and analysis of 214 consecutive cases at a general hospital showing injury to the bones at the wrist. Each case was screened in several directions, and radiographed in at least two, antero-posteriorly and laterally, many of them stereoscopically, and all doubtful cases were excluded. For uniformity of results, the cases have been divided into two series: (1) that in which the lower epiphyses of the radius and ulna have joined their respective shafts, and (2) that in which these epiphyses have not yet united. Of the 214 consecutive cases analysed, 150 belong to the former series and 64 to the latter. The first corresponds roughly with persons above the age of 20, and the second with persons below that age.

#### I.—CASES WITH UNITED EPIPHYSES

(a) *The radius.* This shows injury in 93 per cent of the total number of cases. The radius alone is injured in 41 per cent of the total number of cases. The radius is injured along with the styloid process of the ulna in 42 per cent of the total number of cases, as common as an injury to the radius alone. The radius is damaged together with the shaft and the styloid of the ulna in 3 per cent of cases. It will be noticed how much more frequently the radius is injured with the styloid of the ulna than with the shaft, and it is interesting to compare this with the corresponding injury in the ununited epiphyses series.

(b) *The ulna.* Some part of this is injured in 49 per cent of the total number of cases, about one half the frequency of the radius. Injury to the styloid process occurs in 46 per cent of the total number of cases, so that by far the commonest injury to this bone in this series is here. The shaft is injured in only 7 per cent of the total number of cases, the injury in all cases occurring within two inches of the lower end, and in the vast majority of cases at the styloid process.

(c) *The carpal bones.* Injury is present in one or more of these in 13 per cent of the total number of cases. In none is the carpus injured with the ulna only. The scaphoid is the one most frequently damaged—no less than 13 times out of 10.

(d) *The metacarpal bones.* Show injury in about 1 per cent of the total number of cases.

#### II. CASES WHERE THE EPIPHYSES HAVE NOT UNITED

(a) *The radius.* Injury is present in 89 per cent of the total number of cases. Damage to the shaft shows in 58 per cent of the total number of cases and to the epiphysis in 38 per cent. The shaft is injured alone in 17 per cent and the epiphysis alone in 20 per cent. The radius and ulna are damaged in 33 per cent of the total number of cases. The radius and styloid process of the ulna are damaged in 11 per cent. In the shaft, by far the most frequent is transverse, 89 per cent, while the most frequent injury to the epiphysis is a separation, 79 per cent. Forty-two per cent of the injuries are at the epiphysis, while the remainder are in the diaphysis, generally about 1 inch, and practically all within 2 inches of the articular end. In the shaft 78 per cent are backward, 9 per cent forward, and 13 per cent show none; while at the epiphysis 74 per cent are backward and 17 per cent show none.

(b) *The ulna.* Injury occurs to this in 56 per cent of the total number of cases, at the shaft in 36 per cent, at the epiphysis in 8 per cent, and at the styloid process in 16 per cent. The shaft shows 86 per cent of transverse fractures. The injury is at the styloid process in 28 per cent, at the epiphysis in 14 per cent, and the remainder, 59 per cent, in the diaphysis, most commonly about 1 inch above the articular end. Displacement of the fragment is backward in 63 per cent, forward in 16 per cent, and showing none in 21 per cent.

(c) *The carpal bones.* Only 3 per cent of the total number of cases, no doubt due to the larger amount of cartilage in early life, giving better protection to the bony foci in the carpus. In none of the cases do the bases of the metacarpal bones show damage in this series.

From the foregoing analysis it is seen that the most common injury at the wrist in cases where the epiphyses have joined their shafts is a transverse fracture one half inch above the lower end of the radial bone, the lower fragment being displaced backward and with or without a fracture of the styloid process of the ulna; while in cases where the epiphyses are not yet united the commonest injury is a transverse fracture about one inch above the lower ends of both forearm bones, and with both lower fragments displaced backward.

DONALD C. BALFOUR.

**Pegger: Diagnosis of Fracture of the Lesser Trochanter** (Zur Diagnose der isolierten Abrissfraktur des Trochanter Minor). *Beitr. z. klin. Chir.*, 1912, lxxxi, 138. By Surg., Gynec. & Obst.

Pegger discusses the symptoms of this uncommon injury in connection with the report of a case. It is interesting to know that this form of injury was known to Galen. So far 15 cases have been described in the literature. Localized pressure pain is an important symptom, emphasized by all authors and also present in this case. While the pain is diffuse during the first 24 hours, it becomes localized after that. It may be elicited by pressure over the



great trochanter, may be found posteriorly over the inner portion of the gluteo-femoral fold, or anteriorly in the iliopectineal fossa. Localized swelling over the hip and the upper part of the thigh occurs, but it is not constant and is of little importance. Ecchymoses in the region of the lesser trochanter have been observed, and were present in Pegger's case. Outward rotation of the limb is present in a good many cases, and much stress is laid upon this by some observers. Iuliard explains this in the following manner: The injury acts upon all the neighboring muscles by the pain it produces. This pain lessens or even suppresses their tonus reflexedly. Thus the muscles hold the limb no longer in its normal position. It is everted because its center of gravity is outside of its axis. (The X-ray picture should not be taken in the position of eversion, but in slight inversion and adduction, because the fracture may not show in the former position.) Limitation of motion of a definite type is the most important diagnostic sign. The ileopsoas muscle does not functionate.

In Pegger's case all passive motions were painful during the first few days. The patient could lift the extremity to a very limited degree only when the leg was flexed upon the knee. During this maneuver the extremity was held slightly in abduction and everted. The symptom described by Ludloff became positive twelve days after the accident. This consists in inability to elevate the extremity in a sitting posture while the psoas muscle is tense. This sign certainly is of diagnostic value if present, but unfortunately it appears rather late, as is also stated by other authors. Pegger's patient could not stand upon the injured extremity alone, even after he was able to walk about without aid. The fracture is caused by a sudden pull of the psoas muscle during a protective movement.

The following points deserve attention for the diagnosis: Circumscribed pain, together with the history of a typical accident. Ecchymoses over the lesser trochanter are of importance if present. Outward rotation is not a universal symptom: it was not present in two of the collected cases, and in the author's own case it persisted after the patient was up and walking about. The symptom described by Pochhammer—that the patient is unable to flex the thigh upon the pelvis with the knee extended, while he can do so with the knee flexed, with simultaneous outward rotation and abduction respectively and inward rotation and adduction—was seen by Pegger during the first few days. Attention should be paid to the flaccidity of the psoas tendon during an attempt at contraction. It was noticeable on the first day in Pegger's case.

The treatment was conservative. Complete consolidation followed, despite marked diastasis of the fragments. Function was complete after four months. The patient was able to use the leg in every way, although the rotation was slow to be restored.

E. C. RIEBEL.

# Walton: Injury of the Semilunar Cartilages.

*Proc. Roy. Soc. M., 1912, vi, 1.*

By Surg., Gynec. & Obst.

This article is prefaced by an exhaustive consideration of the anatomical points involved, from which the writer draws the following conclusions:

1. There is a tendency to injury or displacement of the semilunar cartilages.

2. This tendency is brought about by full extension, and is increased with powerful or excessive extension.

3. The tendency is much more marked at the anterior end of the internal cartilage, because: (a) being narrower, this portion of the cartilage more readily undergoes changes due to its own elasticity; (b) owing to the screw action in full extension, the compression force between the femur and tibia is much more marked here than elsewhere; (c) the anterior end of the cartilage is unprotected and loosely attached.

4. Either fractures or displacements of this portion of the cartilage may occur, and both are easily explainable.

5. There is no evidence of any tendency to fracture or displacement with any movement, provided the joint is not fully extended.

In other words, one would expect lesions of the anterior end of the internal semilunar cartilage to be much more common and to be the result of forcible or excessive extension.

As to the location of the lesion, it is much more common in the anterior part of the internal semilunar cartilage. The lesion consists primarily of a fracture of the under surface of the cartilage, which may be longitudinal or transverse and usually is directed obliquely. Of the 77 cases in this report, in 14 the anterior end was torn from its attachment. This was the most common form of lesion. Sometimes the cartilage is separated in the middle and attached only by the anterior and posterior extremities. In some rare cases the attachment is only by the posterior horn.

According to Walton, the only mechanism that can account for this condition is the forcible extension of the leg on the thigh, which terminates with an outward rotation of the tibia on the femur.

In summing up his cases he went into the etiology of this condition, and in 65 there was a definite history: 25 of these cases were caused by football; in 2 there was a distinct history of having kicked at the ball and missed it; in 21, while running, the foot slipped on the ground and was forcibly everted. This could only happen when the leg was extended. In 2 cases a second player fell across the outstretched knee, hyperextending it. Of those apart from football, 15 arose from the foot twisting outward while walking over rough ground, and 5 while running. Various other injuries accounted for the other cases, in all of which, however, there was a distinct history of the extension of the limb. In 78 cases, only 8 were females; that is, a ratio of 8 males to 1 female.



He concludes his article with the following summary:

1. The lesions present are identical in nature and position with those which can be artificially produced by hyperextension and its terminal screw action.

2. The history when carefully investigated gives evidence of hyperextension as a cause.

3. The etiological factors are in favor of the same view.

C. G. GRULEE.

### SURGERY OF THE BONES, JOINTS, ETC.

**Roberts: Recent Advances in Plastic Surgery of the Bones.** *J. Am. M. Ass.*, 1912, lix, 1759.

By Surg., Gynec. & Obst.

Roberts reviews the history of plastic surgery since its revival in the first half of the nineteenth century by Dieffenbach in Europe and Mutter in America. The Egyptian papyrus named after Ebers and attributed to 1500 B.C. is said to mention rhinoplasty performed by flaps. Wolfe of Scotland showed that a free flap or skin graft could be used to correct ectropion. It is now known that teeth, tendon, blood-vessels, fascia, cartilage, nerve and bone may be transplanted with reasonable certainty of a preserved vitality. The essential is that septic infection be absent or mild until the flap or graft has time to become physiologically united with the surrounding living tissue. Ollier of Lyons should be given greatest honor in the field of osteoplastic surgery. Carrel has found that aseptic tissue preserved by cold storage may be successfully used for grafts weeks after removal from the parent body. When a piece of bone is transplanted, its raw surface should be maintained in contact with living bone by nailing or suturing. While new osseous tissue is being deposited, the old bony tissue in the graft is probably being absorbed. He illustrates other conditions amenable to osteoplastic surgery, including nasal and sinus deformities, injuries, ankylosis, and osteoplastic fixation of the vertebral column for tubercular spondylitis. L. G. DWAN.

**Neff: Arthroplasty.** *Surg., Gynec. & Obst.*, 1912, xv, 529.

By Surg., Gynec. & Obst.

Neff carefully reviews the various methods that have been used experimentally and at operation to produce permanent and useful motion in ankylosed joints, and deduces two conclusions therefrom, viz.: first that a pad of connective tissue must be present between the bony ends before the bursa, or new joint, can be formed; and second, that the simplest and most direct method of accomplishing this must be the method of choice. Obviously, the simplest and most direct method is to interpose joint capsule or a flap of fascia, either pedunculated or free, for the ideal operation of arthroplasty. Any other method is indirect and to be used only when the direct method is not applicable. Indications and contraindications for the operation of arthroplasty are carefully discussed.

The author considers from his own experience and the careful study of the literature that the

elbow joint lends itself most favorably to the successful arthroplastic operation. The temporomaxillary was the first joint in which the operation for arthroplasty was performed and, next to the elbow, the one in which the best results have been secured. Owing to the anatomy of this joint and the surrounding structures, the operation is sometimes different from that performed upon other joints, in that the new joint must sometimes be made in an abnormal situation.

The hip joint is third in the list from the standpoint of successful arthroplasty. There are present here two of the essentials for success, viz.: maximum mobility with nearly a minimum of necessary articular surface. Even though called upon to bear the weight of the body in standing and walking, and though held in position only by a comparatively thin capsule and slight restraining ligaments, yet because the head of the femur fits accurately into the acetabular cavity and can generally be preserved in this relationship, which is the ideal operation, the hip joint lends itself quite favorably to the arthroplastic operation.

The knee joint is considered the most unsatisfactory for arthroplastic operation. The reasons for this are: first, because the joint presents extensive articular surfaces which lie flat upon one another without any bony conformation to keep them together, and second, because the entire weight of the body is thrown upon the joints in standing and walking, and because of these two factors we have the main cause of failure in the tendency to formation of dense, thick and unyielding capsular and pericapsular structures to maintain the stability of the joint.

The shoulder joint is rarely operated upon for ankylosis, the movability of the scapula obviating the necessity for operation a great deal. Theoretically, for the same reasons that the hip joint is favorable, the shoulder joint should also be, but owing to the readiness with which muscles around the joint become paralysed and atrophic, the contrary is quite the rule.

It is rarely indicated to perform arthroplastic operations upon the wrist or radio-ulnar joints.

In the surgical cure of bunions arthroplastic operations upon the metatarsophalangeal joint have been performed with uniformly good results. Also a few have been done upon the interphalangeal joints with success.

The article is concluded with case reports, accompanied by splendid photographs and X-ray pictures of cases in which successful arthroplastic operations upon the knee and elbow were performed by the author.

FLOYD B. RILEY.

**Roberts: An Operation for the Reconstruction of Impaired Hip and Shoulder Joints.** *Post-Graduate*, 1912, xxvii, 1043.

By Surg., Gynec. & Obst.

The author presents an operation for the betterment of certain hip conditions which have heretofore



been more or less hopeless of relief. These include unstable joints due to destruction of the head and neck of the femur, ununited fractures of the neck, and congenital dislocations where malformation of the head and neck prevent maintenance of reduction. Roberts also believes it will be of service in early tubercular disease of the head and in cured cases where ankylosis has resulted, and that it may likewise be applicable to disabling osteo-arthritis of the hip and similar conditions in the shoulder where the head of the humerus is involved.

The procedure consists of grafting the head, neck and so much of the body of the astragalus as may be necessary onto the inner aspect of the upper end of the femur or a stump of the femoral neck. The graft is held in place by a bolt having on its distal end a wood screw thread to engage the transplanted bone and on the other extremity a machine thread for a thumb screw. This is passed from the outer side of the trochanter through the shaft and neck, piercing the graft. The thumb screw is then turned down, bringing the fresh surfaces of the astragalus and femur into close apposition. By means of a cylindrical washer or sleeve the thumb screw remains outside the skin wound, and the bolt can readily be removed at the end of two weeks.

Several cases are reported, some of which failed from various causes; but two were successful, proving the feasibility of the operation under proper conditions. In one of these the graft was cut down upon at the end of twelve weeks. It was found firmly adherent to the femur, and a hole drilled into it showed the bone to be red and healthy in appearance. The other showed a stable joint with considerable motion at the end of 20 weeks.

The astragalar grafts are preferably obtained from patients needing operations for paralytic feet, but it is pointed out that the good results following astragalectomy render autotransplantation justifiable in case of necessity.

**Chiari: Preliminary Note on the Transplantation of Bone Minerals.** *München. med. Wchnschr.*, 1912, lix, Nov. By Surg., Gynec. & Obst.

Chiari reports the first results of his study of the function of bone marrow. This report concerns the transplantation of bone marrow, which he has undertaken with the idea of facilitating the study of its rôle in hæmatopoiesis and in osteogenesis. The experiments were performed upon rabbits. At first he obtained the marrow from the manubrium and transplanted it into cellular tissue. This yielded unsatisfactory results. At present he trepanns the femur and removes the marrow with a spoon. The marrow is then transplanted into the spleen. The splenic tissue, having a hæmatopoietic rôle of its own, appears to be the most suitable tissue for the nutrition of bone marrow. He has obtained very satisfactory results by this method. For two months following transplantation the animal is each day subjected to 20 minutes' exposure to X-rays of high intensity. During

this exposure the splenic area is covered with a lead shield. Chiari aims thus to inhibit the bone marrow in all other lesions of the body and to stimulate the hypertrophy of the splenic implantations. How much of his success is due to this treatment he is unable to say. At the end of two months the animal was killed, and macroscopic examination of the spleen showed appreciable growth of the transplanted tissue. Microscopically the transplanted tissue showed the picture of normal bone marrow which was proliferating freely. Mitotic figures were numerous and normal myelocytes and erythroblasts were found. M. C. PINCOFFS.

**Albee: Bone Transplantation as a Treatment of Pott's Disease, Clubfoot, and Ununited Fractures.** *Post-Graduate*, 1912, xxvi, 999. By Surg., Gynec. & Obst.

This is a report of the use and results of bone transplantation in Pott's disease of the spine, as based on 55 successful cases, of which 34 were dorsal, 19 lumbar, and 2 cervical, with ages ranging from 2 to 51 years.

Albee, being convinced of the fact so strongly emphasized in the recent writings and pathologic studies of Ely and others and borne out by the results he obtained by fixation operations of various acute tuberculous joints without attempting the removal of all tuberculous tissue—that bony fixation of tuberculous joints is an absolute panacea—devised the fixation of the vertebral bodies when infected by tuberculosis by engrafting a portion of bone removed from the crest of the tibia and embedded between the longitudinally split spinous processes, thus preventing all motion and relieving the rushing down of the diseased bodies through the superimposed bridge, and holding the vertebræ involved in hyperextension by the splint action of this bone plate, and also by the leverage action of the spinous processes through the lateral facets serving as a fulcrum, the bone graft acting under the great mechanical advantage of being pulled upon lengthwise, thus preventing kyphotic deformity.

The ultimate fate of the bone graft, whether osteogenetic, as maintained by Macewen and others, or osteoconductive, as claimed by Axhausen, Murphy and others, is immaterial, as the result of bone union is had in either case.

In his experimental work in bone grafting in animals, Albee has successfully used bone preserved in salt solution and in Ringier's solution kept in cold storage for a period of four days, and microscopical examinations of these specimens made six weeks to six months after show no dead bone, a profuse blood supply to grafts, and firm bony union of graft to spine.

*Technique of operation.* Patient in ventral position; spinous processes are reached through a sufficiently long curved incision made to one side, skin flap turned up, super- and interspinous ligaments split. Spinous processes are split longitudinally in halves to a depth of about  $\frac{3}{4}$  of an inch with a



chisel, making greenstick fractures of the halves always on the same side, leaving the opposite halves intact to preserve leverage, after which a hot saline pack is applied to back wound thus prepared until bone insert is ready.

With patient still in ventral position, leg flexed on thigh, sufficient incision along the crest of the tibia is made down to the bone, the fascia and subcutaneous tissue are carefully separated from the periosteum of the anterior-internal flat surface of the tibia, and with a sand bag in the popliteal space and behind the leg, a long and thick prism-shaped piece of the tibia is removed with a chisel or motor saw, this piece being long enough to span the diseased vertebræ and include a healthy one above and below. This is placed in its bed between the split spinous processes and held in place by strong kangaroo tendon, drawing together the split supraspinous ligament. The implants have varied from 4 to  $7\frac{1}{2}$  inches long,  $\frac{3}{8}$  to  $\frac{1}{2}$  inch wide, and  $\frac{1}{4}$  to  $\frac{1}{2}$  inch in thickness. The insert should include a portion of the marrow cavity.

The corrective force of the implant has varied from simply embedding a straight graft to a reshaping of the graft to somewhat approach the deformity, and then to forcibly bend this shaped graft into its bed and fasten its ends into position.

The operation, being superficial, takes but from 15 to 30 minutes, and therefore is accompanied with a minimum shock or hæmorrhage, and as it is distant from the neural arches there is no danger of encroachment upon the spinal canal by overgrowth of bone or infection, and no normal anatomical structure or support of the spine is severed or destroyed, but on the contrary taken advantage of. Immediate mobilization is secured of the diseased vertebræ, without disturbing the function of the rest of the spine or interfering with the respiration. The post-operative treatment consists simply of dorsal recumbency for a period of five to twelve weeks, and no external supports were used in any of the above cases except in one adult, who went back to his work as a carpenter seven weeks after his operation.

**Results.** All pain has disappeared in every case no later than the third day, and rapid improvement in general condition is striking. Four cases were complicated by complete paraplegia but cleared up in less than six months. Every wound has healed by primary union. Fifteen months have elapsed since early cases were operated on, and post-operative X-ray findings show union of graft to spinous processes and increased bone proliferation about implant and tips of spines, bone detail of the bodies after several months being clearer. There has been no mortality.

In cases of congenital clubfoot in children over 3 or 4 years old, where adduction of the front part of the foot predominates, Albee has taken a wedge of bone, usually from the upper end of the tibia of the other leg, and engrafted it into the transversely split halves of the scaphoid with gratifying results. In markedly adducted feet, where the

skeleton of the foot is shorter on the inner than on the outer side, a somewhat similar wedge of bone graft has been inserted which served to prop the foot in proper position. This procedure, with or without the insertion of silk ligaments, has been practiced on acquired deformities of a similar nature resulting from infantile paralysis.

Albee also offers this bone graft as an ideal treatment for ununited fractures of pseudarthrosis, where we have appearing early a marked sclerosis of the ends of the fragments, and where freshening the ends of the fragments and the application of the Lane plate has not been trustworthy because of bone sclerosis and lack of osteogenesis; for he thinks the bone graft applied as he describes best supplies what is needed above all, viz.: an added osteogenetic force, as well as perfect internal fixation. By this procedure he has secured bony union in all of four cases operated upon, in one case of which the pseudarthrosis had existed for 10½ months.

ROBERT E. LOULE.

**Cotte: Osteoplastic Diaphyseal Amputations and Bone Grafts** (Amputations ostéo-plastiques diaphysaires et greffes osseuses). *Lyon Chir.*, 1912, Nov. By Journal de Chirurgie.

The various amputations performed, while in the main satisfactory, still leave much work to be desired as to the ultimate result in certain cases.

The author speaks in favor of osteoplastic amputations of the leg. He reports one personal case — tuberculosis of the instep with sinus formation in a man 30 years of age. Circular amputation of the limb was performed, with application of an osteoplastic flap taken from the internal surface of the tibia; excellent functional result; the patient walks upon his stump without pain. Bier says that non-closure of the medullary canal is the principal cause of painful stump occurring after amputations performed by the ordinary methods.

The author had the idea of grafting an epiphysis upon the extremity of the divided bones; thus would he secure the double advantage of perfectly obliterating the medullary canal and of obtaining as in disarticulations an osseous epiphyseal stump, the bony lamellæ of which are admirably fitted to distribute the body weight. He has made one attempt of this nature in a tubercular knee. After a thigh amputation he grafted upon the inferior extremity of the divided femur a tibial epiphysis. Unfortunately the graft was not tolerated; a large hæmatoma formed, there was fever, and at the end of four days the graft had to be removed. One failure should not condemn the method. Other similar attempts should be made to establish the value of the procedure. The author remarks that the extreme conditions under which one advises an amputation are such as render infrequent the need of such a delicate intervention as epiphyseal grafting upon the end of the divided bone of an amputation stump.

CH. LENORMANT.



**Eve: Remarks on the Treatment of Sarcoma of the Long Bones.** *Lancet*, 1912, clxxxiii, 1355.

By Surg., Gynec. & Obst.

Sarcomata fall, for purposes of treatment, into three groups: (1) periosteal sarcomata; (2) central sarcomata composed of round and spindle cells; (3) myelomata.

1. *Periosteal sarcomata.* The periosteal sarcomata spread locally along the periosteum, endosteally through the medulla, and also along the muscles attached to the affected bones. Extension into the veins is early. The author believes that a patient with periosteal sarcoma of the femur should be given the remote chance afforded by amputation at the hip-joint, and removes the femoral lymphatic glands in the preliminary stage of the operation.

2. *Central sarcomata composed of round, spindle, or mixed cells.* Their relative benignity must be ascribed to their being surrounded by a capsule of bone. Central tumors of the lower end of the radius and ulna are less malignant than those of other bones. These growths, if well localized, and especially if spindle-celled, offer a tempting field for resection and the employment of the various methods of osteoplasty.

3. *Myeloma.* Although it has long been taught that the true myeloma has a low degree of malignancy, yet it is only in recent years that it has been recognized as possessing, at least in some situations, a purely local malignancy. The myelomata of the femur, and especially those of the upper end of the humerus, are sometimes followed by metastasis. The author quotes statistics to prove this.

This difference in nature depends rather on the seat of the disease than on the structure of the tumor. The nearer the body the greater the malignancy, would appear to be true of the myelomata as well as of the periosteal sarcomata.

The treatment adopted must depend on the size and extent of the tumor and its locality. The following operations are employed: (1) erosion; (2) resection; (3) amputation. Myelomata of the lower end of the radius and the upper ends of the tibia and fibula (especially the radius) are by far the most favorable for treatment by erosion or resection. Conservative treatment is much less likely to succeed in myeloma of the upper end of the humerus and in both ends of the femur. The true myelomata can usually be recognized by their slower growth, distinct delimitation, the absence of infiltration of bone, their maroon-red color, and often the presence of pulsation at some point.

When autoplasmic grafts are used, the periosteum of the graft should be preserved. In reference to Coley's toxins, he says that anything at all comparable to his successes has not been met with elsewhere, and he would not recommend Coley's fluid in any case of operable sarcoma, nor would he recommend it as a prophylactic against recurrence. The reports of other surgeons have borne out this deduction. Its use should be restricted absolutely to inoperable cases.

DONALD C. BALFOUR.

**Kerr: The Suturing of Tendons.** *Practitioner*, 1912, lxxxix, 639.

By Surg., Gynec. & Obst.

In injuries of this type, the workingman's criterion of success of the treatment is the recovery of wage-earning power. The most frequent locations are the forearm, wrist, and hand.

In the first-aid treatment of this condition asepsis is paramount, the safest dressing being sterile lint covered with sterilized cotton wool. There should be no attempt to examine the wound until the conditions are perfect for asepsis. The diagnosis is first made on the specific action of the tendons in the region of the injury. For this the tourniquet must be removed, which is possible in most cases if the first aid dressing is large and tight.

Expose the wound, paint with iodine (without other wash), and control the arteries with fingers placed proximally to the wound, applying small forceps at once. Continue the subjective examination and inspection of the wound, bearing in mind the circumstances of the accident and particularly the act in which the affected hand was engaged at the moment.

Usually the proximal end is markedly contracted, the distal end rarely so. These are secured, a clean incision being made along the sheath if necessary to reach the proximal end. Local block method anaesthesia is usually sufficient.

Chromicized gut is used for suture. Union of the tendon ends is effected by some method in which longitudinal splitting and pulling out cannot take place. For rounded tendons Schwartz's procedure is recommended; for flat, that of Von Arx. These are based on the fact that though a suture be tied around a tendon, necrosis of the end does not occur. Sheaths and fascia are sutured. The author advises Michel's clips for the skin to avoid stab infection.

The part should be immobilized for 14 to 21 days. Functional treatment is begun the third week, while the adjustment of length is still possible.

E. B. FOWLER.

**Ely: A Simple Operation for the Relief of Deformity in Certain Cases of Volkmann's Paralysis.**

*Am. J. Orth. Surg.*, 1912, x, 201.

By Surg., Gynec. & Obst.

Ely describes a simple procedure for releasing the contractures of the fingers in cases of Volkmann's paralysis, which he discovered while dissecting such a hand, which had been amputated three inches above the wrist five or six years after the paralysis occurred. He says, "The contracture was present though the hand had been amputated, hence the evident uselessness of a bone shortening or tendon lengthening in this case.

"The contracture in this case was due to some of the deeper intrinsic muscles of the hand, and apparently also to the adhesion of new granulation tissue binding the long flexor tendons to the front of the proximal phalanges of the fingers. We found that when we passed the blade of the scalpel on the flat, close to the anterior surface of the phalanx, dividing



these adhesions for a distance of about one half inch, we could easily reduce the contracture, but that until this tissue was divided the contracture could not be reduced.

"The contracture of the thumb was due to a tight contracture of the flexor brevis pollicis, and disappeared when this was divided.

"Now, whether all cases of Volkmann's paralysis are identical I do not know, nor whether this operation would be successful in another case, but I simply tell you what we found, and suggest that it be tried out when you have the opportunity."

JOHN L. PORTER.

**Albee: A Further Report of an Original Treatment for Tuberculosis, Arthritis Deformans, Old Fractures, etc., of the Hip.** *Post-Graduate*, 1912, xxvii, 1017. By Surg., Gynec. & Obst.

Albee reports his ankylosing of the hip in 31 cases, of which 20 were arthritis deformans, 9 tuberculosis of the hip, one a cured tubercular hip, one an old ununited fracture of the neck of the femur with pain and limitation of motion, with ages varying from 22 to 67 years. Albee also states that in 5 of the 17 the process began under 25 years, and concludes that non-articular arthritis deformans of the hip begins in a large percentage of cases in the young or middle-aged, and that therefore the term "senile coxitis" is distinctly a misnomer, though this is contrary to most writings on this subject.

**Technique of operation.** The hip joint may be approached in two ways — by an anterior straight incision, or by U-shaped lateral one and turning up the great trochanter — the latter being preferable to the former in very fat subjects. The joint is reached anteriorly by an incision 5 or 6 inches long starting from just below and inside of the anterior superior spine of the ilium and extending downward, the sartorius and rectus femoris muscles are retracted outward, and the iliacus and psoas magnus are pulled inward, after which all the deeper muscles and structures are separated by blunt dissection. That part of the acetabulum overhanging the head is next removed, exposing the head and facilitating its removal. Approximately one half of the upper capital hemisphere is separated through a plane nearly parallel with the long axis of the femoral neck. The portion to be removed is split, in situ, at right angles to its cut surface with a small osteotome into segments, which are then extracted. The upper part of the acetabulum is transformed into a flat surface, against which the flat surface of the head is finally approximated by abduction of the thigh; the femur is strongly rotated outward; the cartilage on the anterior aspect of the remaining portion is removed, as well as the cartilage on the contiguous surface of the acetabulum, in order to get an ankylosis in two planes at right angles to each other.

To prevent recurrence of adduction deformity after operation tenotomies of the adductor muscles and tendons are done, and both thighs are enveloped in a double spica, one on the operative side to the

toes and one on the well side to the knee, with both limbs in abduction.

Albee, in conclusion, states he believes the field of this operation should be extended to include all conditions which if they existed at the knee joint would be rightly treated by an excision, and emphasizes the fact that the hip is better adapted to this kind of treatment than the knee. He concludes by enumerating the advantages of the operation, which are, briefly:

1. Minimum amount of bony shortening, which is compensated for, as well as that already existing by fixed abduction.

2. Brings large bony surfaces into close approximation and holds them there by the correction of the deformity, thus assuring bony ankylosis and eliminating a painful joint and recurrence of deformity.

3. Dislocation of the femur or its displacement extremely unlikely even from weight-bearing immediately after operation, thus permitting aged patients to get out of bed very early.

4. Involves very little cutting of soft tissues and does not require dislocation of head from its socket, thus producing very little post-operative shock, even in old people.

**Stiles: The After Results of Major Operations for Tuberculous Disease of the Joints.** *Brit. M. J.*, 1912, Nov., 1364. By Surg., Gynec. & Obst.

This paper must be read to be appreciated. It is a presentation of a series of cases of tuberculous joints in children on which the author has performed radical major operations. His mortality is high, but it must be remembered that the type of case subjected to operation is one far advanced in the disease. The paper is distinctly not an appeal for operation in all cases, for Mr. Stiles practices and recommends conservative treatment in earlier cases. For 14 years, as surgeon to the Royal Edinburgh Hospital for Sick Children, the author has consistently advised operation in the severe type of tuberculous joint which has resisted conservative methods or is brought in late in the disease and is practically in the final stage. He takes up the objection which is usually advanced against resection in children, namely, the shortening which may follow. While the number of his cases is not great enough to settle the point, it is quite clearly shown that this objection is probably overestimated considering the seriousness of the cases. Probably the greatest cause of the difference between Mr. Stiles and his critics is that the latter do not appreciate the desperate type of case that the former is considering and operating on. The paper is well worth the careful study of the orthopedic surgeon, the general surgeon, and the medical man.

M. S. HENDERSON.

**Watkins: Concerning the Operative Treatment of Claw-Foot.** *Am. J. Orth. Surg.*, 1912, x, 230. By Surg., Gynec. & Obst.

Watkins describes a modification of Sherman's operation for claw-foot or hollow foot due to par-



alysis of the lumbricales muscles and consequent dropping of the metatarsal heads and contractures of the plantar fascia and muscles.

He first flattens out the foot by wrenching and division of the plantar fascia. When the foot is flat the tendo achillis is divided. This preliminary flattening may require two or more seances. Then he makes a longitudinal incision on the outer side of the dorsum of the foot, exposing the fourth and fifth metatarsal bones. These are drilled laterally in one maneuver without withdrawing the drill, and a strong piece of silk is drawn through both bones and cut so as to leave each bone with a piece of silk running through it. Through a similar incision on the inner side of the dorsum the second and third metatarsals are drilled in the same way and threaded with silk, and the drill is then reversed and passed through the first metatarsal, and that is threaded. That leaves each metatarsal bone threaded with a piece of strong silk drawn through a perforation near the head.

An assistant plantar flexes the toes and dorsi-flexes the foot, thus pulling down the extensor tendons. The silk ends are then basted into the tendon and it is tied down onto the corresponding metatarsal above the point of perforation. The knots are crushed flat and tendon sheaths allowed to fall back into place without suturing.

The skin wounds are then closed and the foot put up in plaster of Paris with the toes plantarflexed to relieve the strain on the tendons. The plaster casts are left on six weeks. After that the patient begins to make voluntary motions with the foot and toes, but does not step until some weeks later. Ten months after operation the first case in which this technique was used showed steady improvement in the amount of voluntary control, and decrease in the deformity.

J. L. PORTER.

**Färber and Von Saar: Technique of Resections of the Foot by Means of a Longitudinal Incision.** *Beitr. z. klin. Chir.*, 1912, lxxxi, 175.

By Surg., Gynec. & Obst.

The author makes a plea in favor of the method of resection of the foot proposed by Obalinski in 1890. This method consists in a partial antero-posterior hemisection of the foot, with disarticulation of the cuneiform bones and of the cuboid. The advantage obtained by this procedure is that the greatest number of tendons, blood-vessels, and nerves are spared. In carefully chosen cases, especially those of tuberculosis of the fore part of the foot (metatarsal, cuneiform, and cuboid bones), it may give good results, as Färber and Von Saar have demonstrated in 4 cases which they operated in Von Hacker's clinic. The authors go even further in that they extend the sagittal hemisection through the entire foot, cutting the calcaneum with a saw; their experiments on dead bodies prove to their satisfaction that this total hemisection is of great value. They claim that it is a simple matter to combine Obalinski's hemisection with the external

retromalleolar incision of Kocher, in this way making it possible to lay bare all the joints of the anterior and posterior tarsus with a minimum amount of damage to the foot. This method, however, has not yet been tried by the authors upon the living body.

They conclude that the method of Obalinski, in its pure or in its extended form, should be retained as a useful operation which gives good results in the treatment of tuberculosis of the foot, the treatment of which has always been thankless and difficult.

E. S. TALBOT, JR.

**Cilley: Treatment of Traumatic Flat-Foot.** *Am. J. Orth. Surg.*, 1912, x, 221.

By Surg., Gynec. & Obst.

Cilley describes the treatment of various forms of traumatic flat-foot, and divides them clinically into three classes — mild, severe, and more severe. The first group, which is caused by strains and sprains about the ankle joints, he treats, if seen early, by strapping with adhesive plaster, either by the so-called basket method or with "the long-stirrup and figure-of-eight." If done promptly this effects a cure.

The second group, due to "bad sprains with some rupture of ligaments and severe contusions without discoverable bone injury," is given a few days' rest with a snug bandage until the swelling and ecchymosis have subsided, and are then strapped in the adducted position or put up in plaster of Paris, and the patient permitted to walk. Where the abductor spasm is marked and the foot is in valgus position, this must be overcome, in one or two seances if necessary. After each seance the gain in adduction is held by a fixed dressing.

The author calls attention to the fact that the patient can often adduct his own foot more successfully than the operator, and proposes an ingenious maneuver to enable him to do so. Constant use of the foot in corrected position, supported by appropriate fixation dressing, is insisted upon as being of value in securing a more rapid use and better function.

In the third class, with fracture, dislocation or other bone injuries, the author reminds us that our object is to get a useful functional foot, and not regard cosmetic results. To do this the foot must be brought into abduction throughout its entire length, and severe twisting or wrenching under anæsthesia may be necessary. At the same time the foot must be kept at a right angle to the leg and the big toe in position to touch the ground. Then the foot is fixed in plaster until it can be supported in its proper position by a shoe with tilted sole, and a foot plate if necessary.

J. L. PORTER.

**Denk: Free Fascia Transplantation.** *Arch. f. klin. Chir.*, 1912, xcix, Nov.

By Surg., Gynec. & Obst.

The article contains details of all the case reports from von Eiselsberg's clinic in which free trans-



plantation of fascia was employed. To cover defects in the dura and the protection of prolapsed brain after removal of brain tumors, were the conditions in which the free transplantation of fascia was most frequently used—19 times. It was used also twice in covering mobilized joints, twice to strengthen the sutures in the peritoneum after ventral herniotomy, once to secure an intestinal suture after resection of the rectum, and finally three times to bridge over defects in the urethra.

The results are summarized as follows: Among the 19 cases of fascia plastic operations on the dura, 4 died of shock; 9 cases recovered with primary union; in 3 cases there were liquor fistulæ, one of which died of meningitis; prolapse of brain occurred 4 times, in 2 instances the prolapse being quite expansive, leading to secondary meningitis, with death. Two prolapse cases were of slight degree, one of which occurred several weeks after complete healing of wound by primary union. The last case should not be considered as a failure of the plastic operation, since the tumor was not found at the time of operation and, presumably by its increase in size, pushed the bone-flap outward before it had time to unite.

The value of the operation in brain tumors on the whole is considerable. The fascia unites with the dura without trouble, and there is subsequent obliteration of the subdural space from the outside, so that prolapse and liquor fistula is prevented. But in order to avoid altogether such complications it is advisable to place the fascia flap with a wide margin over the dura and to unite them with a double row of continuous sutures.

In the two cases of ankylosed joints (elbow-knee), complete recovery with good function occurred. In the strengthening of suture lines and the bridging over of defects, the use of the fascia in aseptic localities is especially of great value. In septic cases the method is uncertain.

M. BUCHSBAUM.

#### Bräunig: Amputations of the Lower Limb.

*Deutsche med. Wchnschr.*, 1912, xxxviii, 2071.

By Surg., Gynec. & Obst.

The author has collected statistics of the amputations performed in the surgical clinic of Rostock during the years 1901-1912, with a view to studying the final functional results obtained, especially the capability of the stump for supporting the weight of the body. Of 122 amputations of the thigh or of the lower leg, Bräunig finds but a small number which afterward were able to sustain the body weight.

He speaks highly of the results obtained by the procedures of Pirogoff and Gritti. In the majority of cases, even where suppuration had been present, the patients were able to walk on the stumps. Among the amputations of the thigh the author found only a single case, and in those of the lower part of the leg only 8 cases, in which the stumps were fit for use.

Bräunig lays stress on the great usefulness of post-operative treatment. He emphasizes the great necessity of early and prolonged massage of the stump. This treatment, which is too often neglected, has enabled a number of patients to make active use of the stump.

E. S. TALBOT, JR.

## ORTHOPEDIC SURGERY

### DISEASES AND DEFORMITIES OF THE SPINE

**Malkwitz: Dislocation of the Cervical Vertebra Without Symptoms Referable to the Spinal Cord.** *Arch. f. Orth. Mech. u. Unfallchir.*, 1912, xi, No. 4. By Surg., Gynec. & Obst.

Reports of 9 cases from the clinics of Hoeftman, Königsberg and Kocher in 1896 and of Hautschel in 1907 stated that dislocations and fractures of the vertebra result always in lesions of the spinal cord. That such is not always true is shown by the 9 cases in which total dislocation of a cervical vertebra was demonstrated by X-ray pictures. In none were paralytic symptoms shown, nor did the patients suffer from great functional disturbances.

**Bottomley: The Surgical Treatment of Injuries of the Spinal Column Affecting the Cord.** *Boston M. & S. J.*, 1912, clvii, 691.

By Surg., Gynec. & Obst.

The treatment of all spinal injuries is determined by the presence, absence, and the character of injury to the cord.

So-called "concussion of the cord" has no distin-

guishing symptoms, and consequently is of no clinical interest.

Simple contusion of the cord is difficult of diagnosis and rarely exists alone. Its treatment is non-operative.

Hæmorrhage within the spinal canal may be extradural, intradural or intramedullary (hæmatomyelia). The extradural and intradural forms are usually not of great importance, and the occurrence of either or both is not to be regarded as an indication for operation unless compression of the mid-cervical cord by the hæmorrhage directly imperils life. When intraspinal hæmorrhage is severe it is usually the accompaniment of more grave cord injury, and its treatment is involved in that of the more severe lesion.

In hæmatomyelia, operation cannot be of avail. Destruction of the gray matter is instantaneous, and such pressure as exists on the white matter will be relieved by the subsequent process of absorption.

Operation is not indicated in complete transverse lesions of the cord, because of the fundamental fact that the axones of the spinal cord (exclusive of the cauda equina) are without neurilemmata, and are



consequently entirely incapable of functional regeneration after division or destruction. Surgeons in general have not accepted as convincing any clinical or experimental evidence yet presented in support of the opposite view.

Though experience has shown that the diagnostic line between complete and partial lesions of the cord is not always an absolute one, yet definite and permanent absence of the deep reflexes, the most striking feature of total lesions, may safely be regarded as of absolute worth in practically all cases (the Bastian-Bruns law).

A temporary loss of these reflexes has been observed in many cases of partial lesion of the cord. Sencert and Auvray look on the early appearance of the reaction of degeneration in the affected nerves as the diagnostic mark of a total lesion.

It is probable that in the future operations for total transverse lesions will be undertaken only with the idea of trying to make an anastomosis of the nerve roots above and below the lesion.

If the diagnosis of a partial lesion of the cord is certain, and no evidence of spinal deformity is found, operation is not indicated, at least as an immediate measure. If there is spinal deformity, active treatment should be instituted. Active treatment does not always mean operative treatment. In certain cases the effect of position, traction, "gravity reduction," etc., should be tried first. Later, operation may become necessary, and it is to be advised if the nerve symptoms have not improved spontaneously or if aggravation of the nerve symptoms is in evidence.

In isolated, depressed and displaced fractures of the spinal arches, with signs of a partial lesion of the cord, operation should be undertaken promptly. Likewise, in fracture-dislocations, with symptoms pointing to a partial lesion, operation is indicated.

In fracture or deformity of the midcervical region, where there is danger of pressure on the fourth cervical segment, operative treatment is to be advised.

Operation is indicated in all lesions of the cauda equina.

Do not regard laminectomy as a harmless operation. Be conservative in using it as an exploratory measure. If laminectomy is undertaken, it should be done with all possible gentleness and with particular attention to hæmostasis.

**MacCordick and Nutter: Traumatic Spondylolisthesis Following a Fracture of a Congenitally Deficient Fifth Lumbar Vertebra.** *Am. J. Orth. Surg.*, 1912, x, 214.

By Surg., Gynec. & Obst.

The authors describe the autopsy findings in the case of a man of 37 who received a crushing injury to his spine from a heavy steel beam which fell upon his back. Paraplegia followed immediately, laminectomy was performed and the second lumbar vertebra was wired to the third. He never recovered from the paralysis, but lived two years. At the autopsy it was discovered that the fifth lumbar

vertebra was displaced forward 2 cm., and further examination revealed that the neural arch of this vertebra was separated from the body, and probably had always been, as a false joint existed between the fragments on both sides of the arch, covered with periosteum, and the left half of the arch was smaller than normal.

The intervertebral disc between the second and third vertebrae was missing and the vertebrae united by cartilage, the second being displaced laterally upon the third. The authors believe the disc disappeared by absorption following the injury, as there was evidence of its having protruded into the neural canal, and the cord showed evidence of crushing injury at that point.

J. L. PORTER.

**Reynolds: The Diagnosis and Treatment of Compression Paraplegia.** *Brit. M. J.*, 1912, Nov., 1140.

By Surg., Gynec. & Obst.

The paper is largely taken up with causes and symptoms of compression paraplegia. Among the causes, the author points out that occasionally an obscure paraplegia may be due to a metastasis from a malignant growth elsewhere in the body. This primary growth may be very small and easily overlooked such as small breast cancers or thyroid cancers. The treatment is usually surgical. Operation is recommended in those cases due to tuberculous caries rather than to trust to too prolonged rest (the conservative method of treatment), whereby permanent damage may ensue before the inflammation has subsided. Reynolds condemns delaying laminectomy too long in doubtful cases.

M. S. HENDERSON.

**Roberts: The Treatment of Pott's Disease by Hyperextension.** *Post-Graduate*, 1912, xxvii, 1033.

By Surg., Gynec. & Obst.

Roberts reports the results of two years' work in Pott's disease, showing by photographs and tracings the effect of plaster jackets applied in hyperextension by means of the "jack and sling," an apparatus devised by him three years ago. The machine is extremely simple, portable and apparently more efficient than any apparatus previously used. It consists of an automobile jack to which is attached a horizontal bar carrying a bandage sling about three inches wide. The theory of its operation is to make the diseased area a fixed point by placing the kyphos on the bandage, which, as the jack is operated, raises this part and allows the distal ends of the spine to fall away from it, thus producing a gap between the diseased vertebrae. A plaster jacket applied in this position maintains the relations of the bones, and when the patient is placed on his feet, weight-bearing is taken up by the lateral articular facets and the diseased bodies are relieved of pressure and friction. Roberts' cases show that where treatment is begun early deformity is never marked, and in some instances has been entirely prevented. In older conditions the deformity has been greatly reduced. No abscesses occurred in the



early cases, and the period of treatment was considerably shortened. The method is advised for all lesions below the eighth dorsal vertebræ, and the published results seem convincing as to its efficacy.

**Elmslie: The Varieties and Treatment of Lateral Curvature of the Spine.** *Lancet*, Lond., 1912, clxxxiii, 1430. By Surg., Gynec. & Obst.

Lateral curvature of the spine is classified according to pathological causes: (1) congenital; (2) rickety; (3) secondary, which may be due to (a) tilting of the pelvis from shortness of one leg, (b) tilting of the pelvis from fixed adduction of one hip, (c) torticollis, (d) fibrosis of the lung or adherent and thickened pleura, or (e) spinal caries; (4) paralytic; (5) adolescent or static, which includes the greater proportion of cases; (6) hysterical. The anatomical varieties are: (1) postural curves—the position is one which the normal spine can assume; (2) structural curves—the position is one which the normal spine cannot assume. In any case there may be one or more of three elements of deformity: displacement, deviation, and rotation. The author considers the different explanations offered for the deformity of rotation. *Postural curves*: those which represent an attitude of the spine which is normal in certain attitudes, but which is abnormal in that it has become habitual. *Structural curves*: those which represent an attitude which is not possible to the normal spine. The commoner lateral curves may be classified as follows: (1) weak spine; (2) single curves; (3) transitional curves; (4) double curves; (5) treble curves.

*Treatment.* The problem of treatment is purely mechanical and involves four methods: (1) The strengthening of the spinal muscles or of certain sections of them; (2) the training of the spinal muscles so that the patient without voluntary effort assumes a symmetrical habitual posture; (3) mechanical and forcible stretching of the spine to undo curves which have become at all fixed; (4) mechanical support to the spine to prevent increase of the deformity. D. C. BALFOUR.

**Bradford: Scoliosis; A Corrective Jacket Applied in Sections.** *Am. J. Orth. Surg.*, 1912, x, 178. By Surg., Gynec. & Obst.

Bradford describes a method of applying corrective jackets of plaster of Paris for the correction of scoliosis. By this method the pelvis is fixed in the desired position and enclosed in plaster dressing. Then the position and relation of the shoulder girdle is similarly corrected and fixed, and after the plaster has set the middle section, represented by the ribs, is corrected as much as possible, and by a third section of plaster bandages is connected with the other two sections. J. L. PORTER.

**Lord: The Treatment of Scoliosis by Plaster, Supplemented by Pneumatic Pressure.** *Am. J. Orth. Surg.*, 1912, x, 183. By Surg., Gynec. & Obst.

The author describes a method of treating fixed type of scoliosis by plaster of Paris jackets. Large fenestra are cut over the abdomen and breasts and

under the high shoulder. The plaster is carried up over the shoulder so as to make pressure against the neck. The low shoulder is held up by a wide padded strap attached to the plaster of Paris, while the high shoulder is held back by a similar strap.

In addition to the usual corrective pressure exerted by the cast, he resorts to the introduction of pneumatic pads under the casts when they are put on, and by subsequent inflation additional corrective pressure can be made against the prominent ribs in front and behind. These pads are made of sections of the inner tube of automobile tire from four to eight inches long, with the ends vulcanized together so as to make a closed bag. A bicycle valve is set into the edge of the pad, and this is so placed that when the fenestra are cut out of the casts the valve protrudes so as to permit of inflation with a bicycle pump. In this way graduated pressure can be exerted up to the limit of tolerance. Reference is made to similar use of pneumatic pressure by others—Bade, Lubinus, Bilhaut, and McHenry.

J. L. PORTER.

#### MALFORMATIONS AND DEFORMITIES

**Ridlon and Thomas: Absence of the Bony Femoral Heads and Necks.** *Am. J. Orth. Surg.*, 1912, x, 205. By Surg., Gynec. & Obst.

The authors call attention to the rarity of congenital defects in the upper end of the femur and cite briefly the references in literature to such conditions.

Two cases are reported of rachitic children in which no femoral heads could be detected by palpation or X-ray plates. One child was 2 years old, the other was 7½.

In one case (Thomas), after treatment by recumbency and anti-rachitic diet for something over a year, the X-ray plate revealed a head and neck present on both sides, one in the acetabulum and one displaced. The older case (Ridlon's), after three years without treatment, shows an increase in lordosis; the child has grown little, if any, and walks with difficulty. The upward displacement has increased. The X-ray plate shows a suggestion of a femoral head in the acetabulum but no neck.

As the condition in both these cases seemed to be due to the severe rachitis and later showed evidence of development of the femoral heads, the authors believe the ossification in these cases was simply delayed, and propose calling the condition an absence of the bony heads and necks of the femur. Anti-rachitic feeding and recumbency to prevent deformity due to weight-bearing would seem to be the treatment indicated. J. L. PORTER.

**Stevens: Cause, Prevention, and Cure of Weak and Flat Feet.** *N. Y. M. J.*, 1912, xcvi, 957. By Surg., Gynec. & Obst.

Despite the title, the article is chiefly a discursive description of the author's idea of the mechanics of weight-bearing in the foot. He believes the chief source of strain, which results in weak and flat feet, is the lack of support of the base of the fifth metatar-



sal bone in our ordinary shoes. The fact that the structure of the sole of the foot fits it for its function as a "shock absorber" is well explained in the author's very interesting exposition of the various intricate mechanical factors involved in the foot in sustaining and propelling the body weight.

The only suggestion as to treatment of weak feet is that the inner side of the sole should be raised so as to throw the weight toward the outside of the foot, and give the base of the fifth metatarsal a firm, rigid support in the same plane as the ball and heel.

J. L. PORTER.

## SURGERY OF THE NERVOUS SYSTEM

**Collins and Armour: The Metastasis of Hypernephroma in the Nervous System: Jacksonian Epilepsy Caused by Such Lesion.**  
*Am. J. M. Sciences*, 1912, cxliv, 726.

By Surg., Gynec. & Obst.

It is a well-known fact that tumors of the adrenals may exist without symptoms, and that metastasis of such tumors may occur in parts of the body remote from the adrenals, without previous or coincident manifestations of disease in the adrenals. At times one has to distinguish bone metastasis of it from brachial, pelvic and other forms of neuralgia, but these are of rare occurrence.

The author reports a case of Jacksonian epilepsy which was found to be dependent upon a metastasis of hypernephroma. The patient was a Bohemian cigar-maker, aged 45 years, who had not been ill since childhood until he had an attack of unconsciousness four months before he entered the Neurological Institute in July, 1911. This attack came on suddenly while he was at work, May 9, 1911. He felt a twitching of the left thumb and forefinger, followed by a sensation of numbness and tension gradually extending up to the shoulder, and then he lost consciousness. Within an hour he felt quite well again, save that he was weak and discouraged. Five hours later he had a second attack, but without loss of consciousness. Within a few days he began to have attacks characterized by paræsthesia in the left hand and forearm and twitching of the thumb and index finger, which were not accompanied by any disturbance of consciousness and which were not followed by any loss of dexterity. He had from one to five such attacks every day for three months following the original attack. Later he had three attacks, each typical of Jacksonian epilepsy. A physical examination at this time failed to reveal any disease of the brain, nor did the patient complain of any symptoms save those that have been enumerated. In September, 1911, he had developed a slight somnolency. Wassermann examination of the blood and cerebrospinal fluid was negative. In the latter part of September he developed a rhythmic movement of the thumb and index finger, the movements being at the rate of 1 per second. He also complained of severe pain in the back of hand and wrist. There was no disturbance of contact or thermal sensibility.

Five months after the initial symptom, the patient, while lying in bed, had a series of convulsions and died.

Autopsy showed a large whitish tumor in the right flank. This tumor had invaded the upper pole of the right kidney, surrounded the adrenal, and extended into the under surface of the right lobe of the liver. Small metastases were found in other parts of the liver as well as near the junction of the jejunum. The only other metastasis found was in the right cerebral hemisphere. This was  $1\frac{1}{2}$  inches in diameter, situated one fourth of an inch below the surface midway between the vertex and the base, that is, in the arm area, and more particularly in the hand area.

We also find metastasis occurring in the ovaries and testicles. This conception of hypernephroma must lead one to regard it as a congenital phenomenon. These secondary tumors more commonly occur in bone, this case being only the third of its kind on record.

H. A. POTTS.

**Chalier and Bonnet: Neurotomy of the Superior Laryngeal Nerve in Tuberculous Dysphagia; Anatomical Considerations; Technical Indications** (La névrotomie du nerf laryngé supérieur dans la dysphagie tuberculeuse: données anatomiques; indications techniques). *La Presse méd.*, 1912, xx, Nov.

By Journal de Chirurgie.

In the treatment of painful dysphagia due to laryngeal tuberculosis or laryngeal cancer, excellent results have been obtained by the intraneural injection of cocain, alcohol, and other agents in the superior laryngeal nerve. In spite of the simplicity of this method, it is a blind procedure and has all the disadvantages of such procedures. The nerve may have a more or less abnormal course and thereby escape the needle and the injection. Furthermore, one runs the danger of puncturing the thyrohyoid membrane and injecting the syringe contents into the pre-epiglottic space in the laryngopharyngeal grooves, and thereby determining regional oedema productive of symptoms of greater or less severity. In some cases the result of the injection is slight and of short duration; repeated injections may be necessary.

Owing to these disadvantages, the authors suggest a procedure which can be used alone or as an adjunct to the various analgesic methods. They suggest the resection of the internal branch of the superior laryngeal nerve. They proceed as follows. The patient is placed in the same position as for ligature of the external carotid. The operator is on the side of the patient on which is the nerve



which is to be resected. The assistant is on the opposite side, pushing the hyoid bone toward the operator. The operation is done under local anæsthesia. There are three main landmarks—posteriorly, the anterior edge of the sterno-cleido-mastoid; superiorly, the inferior edge of the hyoid bone; inferiorly, the superior thyroid cartilage. The operation is performed in three steps. First, a horizontal cutaneous incision 4 cm. long, midway between the hyoid bone and the thyroid cartilage and extending from the anterior border of the sterno-cleido-mastoid to within 1 cm. of the median line. The second step is the incision of the superficial cervical aponeurosis. This is also a horizontal incision and should be of the same length as the cutaneous incision. The posterior border of the thyrohyoid muscle is located behind, and the lateral notch of the thyroid is located below by the index finger. By keeping in front of this notch the operator avoids injuring the external laryngeal nerve. The third step consists in exposing and dividing the superior laryngeal nerve. This nerve is sought in the retrothyroid space. It is deeper than the superior laryngeal vessels, but like them it courses upon the thyrohyoid membrane and is found about midway between the hyoid bone and the thyroid cartilage.

The superior branch is exposed. A thread is placed around it and its divergent ramifications become manifest. Only the horizontal branch of the nerve calls for division, the section being made between the terminus of the nerve and the origin of the external laryngeal. No traction is exerted upon the central segment of the nerve, as this might produce respiratory reflexes. One may add, if he deems it necessary, to simple division of the nerve, the excision or avulsion of the peripheral end of the superior branch.

J. DUMONT.

**Bérard and Chalié: Traumatic and Operative Lesions of the Cervical Pneumogastric** (Les lésions traumatiques et opératoires du pneumogastrique au cou). *Lyon Chir.*, 1912, viii, 461.

By *Journal de Chirurgie*.

The gravity of these lesions must not be exaggerated, and they must not appall surgeons in performing operations upon the neck. The authors report 8 cases, in 2 of which the right pneumogastric and sympathetic were resected in the course of operation for removal of malignant tumors. In one of these patients, operated upon two years ago, there were no immediate nor late symptoms. Recovery occurred and persists. The other patient died on the fourth day after operation from pulmonary complications, with a rapid pulse of low tension. These accidents, however, differed in no way from those which are often noticed after prolonged, shock-producing operations during which air enters into the veins. In 6 other cases Bérard and Chalié observed pneumogastric irritation due to operative maneuvers. They noted irregular respirations and slowing of the pulse, but these were only short

alarms, and in not one of the cases were secondary pulmonary phenomena manifested.

The study of the scattered cases reported in the literature confirms this habitual innocuousness of pneumogastric resection. Irritation of the pneumogastric is more dangerous than section or resection.

*Traumatic injuries.* They are uncommon—may be due to gunshot wounds, to stab wounds, to fractures of the hyoid bone, etc. In the majority of cases they are complicated by lesions of neighboring nerves (sympathetic, hypoglossal, etc.) or by lesions of contiguous vessels (carotid artery, internal jugular vein). The complexity of the lesion in these cases makes it difficult to determine which symptoms are due to injury of the pneumogastric or which are due to injury of the other organs. Respiratory disturbances, paralysis of the corresponding vocal cord, and at times coughing and dyspnoea are noted. Cardiac symptoms are present also; acceleration of pulse. Digestive disturbances are exceptional. These lesions give a bad prognosis. In 14 cases that were followed, there were 7 deaths and 7 cures. Two of the deaths were due to asphyxia and 5 to pneumonia. Vocal and respiratory disturbances usually disappear after a few weeks. There have been permanent laryngeal paralyses.

*Operative division or resection of the nerve.* This is more interesting, for the precise effect of the nervous lesion can be determined. The authors collected 54 cases, almost all occurring during the operative removal of malignant tumors of the neck. All were unilateral. There is no known example of bilateral vagotomy in man. In the lower animals, bilateral division of the pneumogastric is always fatal. The ligature or partial resection of the neighboring large neck vessels was often practiced at the same time—the jugular 32 times, the carotid 28 times.

The effects of vagotomy must be considered: (1) With reference to the heart. At time of the division there is a sudden acceleration of the pulse, exceptionally preceded by slowing. This tachycardia is never associated with alarming symptoms, and disappears in a few hours or in a few days. (2) With reference to respiration. Outside of recurrent paralysis, which is the rule, immediate respiratory symptoms are nil, or so light that they escape detection. The secondary pulmonary complications are frequent, are explained by the nature of the operation, and do not depend upon unilateral vagotomy. (3) With reference to the digestive apparatus. Dysphagia has been noticed, but only in cases in which it could be explained by the seat of the operation (tongue, pharynx, œsophagus). So that it can be said that unilateral division, be it on the left side or on the right side, of the normal or of the diseased pneumogastric nerve, has in itself no gravity. The divided nerve should, if possible, be sutured; laryngeal paralysis may thereby be improved.

*Operative irritations.* They constitute the most serious traumatism of the nerve, especially when



the irritation is strong, (ligature, pinching); simple denudation or stretching of the nerve determine only temporary symptoms. In cases of violent irritation there have been noticed, with reference to the heart, temporary slowing of the pulse, temporary stopping of the heart, and even mortal syncope; with reference to respiration, violent or continuous dyspnoea, momentary arrest of the respiratory movements, and at times permanent arrest of the respiration; with reference to the digestive apparatus, nausea and vomiting. Never have any late pulmonary complications been noticed. The fatal accidents are usually due to conditions independent of the nerve lesion (anæsthesia, cachexia, hæmorrhage, etc.).

CH. LENORMANT.

**Sicard and Desmarest: Dorsal Spinal Gangliectomy** (Gangliectomie rachidienne dorsale). *La Presse méd.*, 1912, xx, Nov.

By Journal de Chirurgie.

In tabetic gastric crises and in certain intercostal neuralgias, Franke proposed intervention at the level of the intercostal spaces and extirpation of the spinal ganglia by traction upon the exposed intercostal nerves as they emerge from the intervertebral foramina. Usually, in this operation, the nerve is ruptured at a distance varying from  $\frac{1}{2}$  to 1 cm. from the spinal ganglion, and owing to this the operation is ineffective. To surely remove a ganglion one must divide the costotransverse ligaments, free the intervertebral foramen, and with a curved sound expose the nerve as it escapes from the vertebral column. The nerve can be exposed by this method and the ganglion extracted, but it is at the expense of tissue lacerations, and the pleura and the dura are injured. One notes that the dura mater is solidly attached to the periosteum by fibrous bands extending beyond the ganglion and merging into the neurilemma of the intercostal nerve. In pulling away the ganglion one injures the meninges; serious consequences may result.

The authors propose, for exposure and removal of spinal ganglion, a simpler route. After a laminectomy and exposure of the epidural space, the different medullary roots are identified, ligated and divided close to the spinal cord, but without opening the dura mater. Then, with the aid of a Kocher forceps the ganglion with the attached roots in the intervertebral foramen is removed.

This operation, to which they give the name of

extradural-spinal gangliectomy has the following advantages: It is benign, because it permits the removal of the ganglion without injury to the dura mater, and therefore without loss of any cerebrospinal fluid. Furthermore, it permits complete removal of the ganglion and acts upon the sympathetic system by removing the anastomotic sympathetic filaments. This operation, however, will not often be practiced upon tabetics, as in them the radicular ganglionic lesion is not definitely localized, the meningitis is usually, if not always, diffuse, and the inter-ganglionic anastomoses are too numerous to be effectively suppressed. This operation is the operation of choice in certain intercostal neuralgias and also in the painful sequelæ of intercostal zona.

J. DUMONT.

**Bungart: Resection of Posterior Dorsal Roots for the Treatment of Gastro-Intestinal Crises in Tabes Dorsalis** (Ein Beitrag zur Frage der Behandlung gastro-intestinaler Krisen bei Tabes Dorsalis durch Resektion hinterer Dorsalwurzeln). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1912, xxv, 702.

By Surg., Gynec. & Obst.

The author reports three cases of tabes with gastro-intestinal crises operated on by Förster's resection of posterior dorsal roots. The results were satisfactory in general. In the first case the gastro-intestinal trouble was completely removed, the second case was much improved, and in the third case the crises did not occur again. This is in accordance with the observations of other authors. Of 43 cases operated, 35 are reported as cured or considerably improved. The majority were severe cases, and in some there was a vital indication for the operation. No relapses have taken place in cases which were seen one and one and a half years after operation, this period is, however, not long enough to speak of a permanent cure. The operative procedure is as follows: After incision, the musculature is loosened, the vertebral arches resected, and the wound surfaces covered with thick compresses and pulled apart with especially constructed long, broad, sharp hooks, thus allowing good view of the field of operation and control of otherwise disconcerting parenchymatous hæmorrhages. The resection of the roots follows, and takes but a few minutes. The author does not consider the loss of cerebrospinal fluid as dangerous as some. This is however, different if cerebral tumors are present.

E. S. TALBOT, JR.

## DISEASES AND SURGERY OF THE SKIN AND APPENDAGES

**Hesse: The Origin of Epithelial Cysts.** *Beitr. z. klin. Chir.*, 1912, lxxx, Oct.

By Surg., Gynec. & Obst.

It has been taken for granted that this question was a settled one, and that it was now proven, both by the anatomic and clinical observations of Gross, Reverdin, and Garre, and by the experiments of

Kaufmann, that the traumatic cysts which are found most commonly on the fingers are due to the inclusion of the hypoderm and subcutaneous cellular tissues of the small fragment of the epidermis. This latter development gave rise to the traumatic epidermoid cyst. Each has attempted to establish, experimentally, Pels-Leusden's theory



as to the pathogenesis of these cysts. The author attributes their origin to ectodermic epithelial débris derived from the glands of the skin or from the sheaths of the hair molecules, and his experiments on rabbits show that in certain cases the sheaths of the hair follicles and glands of the skin may give rise to a cyst formation which is in all ways analogous (epidermoid).

The conclusion drawn is that the theory of Pels-Leusden is not to be ignored, and that though these cysts may be mostly due to buried epidermis they may also at times have their origin in the glands of the skin or the hair follicles. M. C. PINCOFFS.

**Heddæus: Treatment of Large Carbuncles by Circumcision** (Ueber die Behandlung grosser Karbunkeln durch Zirkumzision). *München med. Wchnschr.*, 1912, I, 2459. By Surg., Gynec. & Obst.

The case in question was a carbuncle in the neck of a diabetic. This had been previously treated by the house physician, first, with compresses and then by crucial incision, but the condition did not improve. When admitted to the clinic much bloody pus was emptying through the incision from an abscess which undermined the skin far to the right. The inflammatory infiltration reached to the sternocleido-mastoid muscle forward and to the tabular surface of the occipital bone; the skin was bluish red and oedematous. A deep circular incision was made through all tissues down to the musculature, and on the skull down to the periosteum. Tincture of iodine was then applied and the operation wound tamponed with wet collargol gauze. The large median abscess was then opened and deep radial incisions made to allow the removal of the pus. The success was remarkable. The oedema disappeared, temperature became normal, and the patient had no pain. The wound was rinsed with  $H_2O_2$  solution and again dressed with collargol gauze. On the second day necrosed tissue had been cast off. Temperature then increased; intravenous collargol injections had no effect; respiration became forced, and on third day after operation coma set in, and exitus occurred in the afternoon. Post-mortem autopsy showed small miliary abscesses on the entire periphery of the lung, which undoubtedly within a few days would have caused death. Great masses of staphylococci were found in the tissue and vessels of the lungs. From the surgical stand-

point it seems impossible that the infection of the lung was caused by the operation, because of the immediate application of iodine and tamponage. The first case (reported in September, 1912) showed the good results of the treatment, and the second was on the way to do so. Early operation with the described method is advised in cases such as this, and is also advocated for anthrax carbuncle.

E. S. TALBOT, JR.

**Weber: Multiple Calcification in the Subcutaneous Tissue.** *Proc. Roy. Soc. M.*, 1912, vi, 14. By Surg., Gynec. & Obst.

This interesting case occurred in a German girl, aged 7, who presented, at the clinic, hard nodules in the subcutaneous tissue of the extremities and the portions of the trunk adjoining the extremities. The child had suffered from numerous contagious diseases and pyogenic infection and was in a severe state of malnutrition. Two of the softened nodules had ulcerated through and were found to contain calcium carbonate and calcium phosphate. Cultures remained sterile. Microscopic sections of the calcareous masses showed a matrix of subcutaneous connective tissue in which the lime salts were embedded. The etiology is very obscure.

This is a true case of calcinosis. These cases are very rare, and only a few have been reported. The danger lies in the ulceration and the resulting infection. C. G. GRULEE.

**Schüle: Treatment of Furunculosis** (Zur Behandlung der Furunkulose). *München. med. Wchnschr.*, 1912, I, 2458. By Surg., Gynec. & Obst.

A single furuncle can be cured in all cases if the center of it is cauterized deeply enough and early enough, i.e., within the first 48 hours. A wheal is formed on the margin of the infiltration with 1 per cent novocain solution, the center of which is then punctured and novocain injected into the subcutaneous tissue; the wound is then deeply cauterized and tamponed. The fully developed furuncle is not influenced by cauterization. Prophylactic treatment is epilation of the infected area, inunction with Credé's salve, washing with spiritus saponato calcinus or spiritus absolutus, followed for two weeks by inunctions of zinc salve. For carbuncles, cross-incision with the Paquelin cautery is advocated.

E. S. TALBOT, JR.

## MISCELLANEOUS

### CLINICAL ENTITIES—TUMORS, ULCERS, ABSCESSSES, ETC.

**Fraser: A Possible Test in the Differentiation Between Human and Bovine Types of the Tubercle Bacillus.** *Brit. M. J.*, 1912, Nov., 1432. By Surg., Gynec. & Obst.

The author states that by injecting an emulsion of the bacilli preferably into the knee joint of the

rabbit a ready differentiation between the human and bovine tubercle is at hand. If the human type is injected, the rabbit continues to put on weight or remains constant. No stiffness or joint pain ensues. If the joint is examined three or four months later, the picture of a chronic synovial tuberculous joint is presented. If the emulsion is of the bovine type the changes are rapid and acute. In ten days the



animal is crippled, and there is progressive and continuous loss of weight. Examination of the joint three or four weeks later shows acute synovial tuberculosis. Fraser presents a table of 15 applications of the test to substantiate his theory.

M. S. HENDERSON.

**Shattock: The Microscopic Structure of Urate Calculi.** *Proc. Roy. Soc. M.*, 1912, vi, 1.

By Surg., Gynec. & Obst.

The proportion of cases of urate calculi is much less than that of uric acid calculi. The article contains a detailed account of various urate calculi, together with microscopic photographs of the same. The nucleus of the urate calculi consists of a conglomeration of spherules held together by vesical mucus. The body consists of a regular growth of further spherules deposited on the nucleus and held together by vesical mucus. The urate calculi consist of fine crystals which have a rod-like or bacilli-form character. These crystals are disposed radially, the smaller spheres showing only a radial striation. In the larger ones there is a crust added.

When the organic calculus is dissolved in hydrochloric acid, a matrix is left in which is found some inorganic salts, consisting mainly of phosphate and carbonate of lime. In regard to the nature of the matrix it consists wholly or in part of mucin.

C. G. GRULEE.

**SERA, VACCINES, AND FERMENTS**

**Eversole and Lowman: The Use of Carl Spengler's "I. K." Serum in the Treatment of Tuberculous Joint Disease, with Report of Cases.** *Am. J. Orth. Surg.*, 1912, x, 234.

By Surg., Gynec. & Obst.

The authors present a preliminary report on 19 cases of tuberculous joint disease treated with Spengler's "I. K." serum. Twelve had pulmonary as well as joint involvement, many had abscesses, extensive bone destruction or sinuses, and one had Pott's paraplegia. The time of treatment varied from three months to a year and a half. All cases but one, which died from extensive lung involvement, showed rapid and marked improvement, particularly in weight and general condition; and in cases with sinuses the rapid decrease in the discharge seemed especially marked.

The authors refer to improvements in technique since the report of a similar series of treatments by Porter and Quinn (*Am. Jour. Orth. Surg.*, Feb., 1912), but do not explain what the improvements are nor the details of technique used. Their conclusions, which correspond closely with those of other observers, are: Practically every case except Case 1 gained steadily, and general resistance seemed greatly raised.

Those with absorption from two foci seemed to become less and less toxic and gained just as steadily as others, although not so rapidly.

Sinuses discharged much less, and those that were painful became much less so after "I. K." treatment was instituted.

J. L. PORTER.

**Vaughan: Blood Changes Caused by the Hypodermic Administration of the Cancer Proteid.** *J. Am. M. Ass.*, 1912, lix, 1764.

By Surg., Gynec. & Obst.

Vaughan used vaccines in over 200 cases of recurrent or inoperable malignant disease. This work was based on the belief that injection of any specific proteid within the human body would result in formation of specific ferments for the splitting up of each proteid. Cases with a marked decrease in polymorphonuclear and a corresponding increase in mononuclear leucocytes received benefit from the vaccines. In cases which have been without vaccine treatment from two to four years, the percentage of non-recurrence is ten.

Since vaccine treatment would benefit only a small percentage of cancer sufferers, an attempt was made to produce an active ferment for splitting up of malignant cells in bodies of animals. Sheep and rabbits were injected with cancer residue and cancer vaccine. The large mononuclears are invariably increased from 100 to 400 per cent within 24 to 48 hours.

To ascertain what bearing this had on the formation of a specific ferment, several rabbits were sensitized to cancer cell and varying percentages of cancer-cell emulsion were injected intravenously. Rabbits with a percentage above 30 of large mononuclears usually died within one to three hours. This is probably due to destruction of cancer cells and liberation of their toxic radicle by the specific ferment present in the blood serum; later a reaction between cancer cells and large mononuclear cells occurs.

Sheep and rabbits were injected with cancer proteid and their serum taken when the percentage of large mononuclear cells was at its height and injected into 12 cases of inoperable carcinoma. In all cases there seemed to be an improvement in the condition of the malignant growth, but the serum complications were marked in over 50 per cent of the cases.

To avoid serum complications the specific ferment was removed from the large mononuclears by solution. As small an amount as 1 cc. of this leucocyte extract injected directly into the tumor may cause sudden and severe symptoms.

L. G. DWAN.

**Lamar: Chemo-Immunological Studies on Localized Infections.** *J. Exp. Med.*, 1912, xvi, 581.

By Surg., Gynec. & Obst.

Lamar has shown in earlier papers that mixtures of immune antipneumococcic serum, sodium oleate, and boric acid have a highly beneficial action in cases of localized pneumococcic infections. During the search for an "optimum mixture" Lamar has attempted to apply this method of treatment to a localized infection which closely simulates pneumococcic infection in man. Pneumococcic meningitis in monkeys was found to resemble closely in pathological and clinical features the same disease in the human, and it is the work on these cases which is reported in this paper. As a control, 7 animals were



injected, by lumbar puncture, with 0.1 cc. of a diluted broth culture of a virulent pneumococcus. A rapidly fatal meningitis and bacteræmia was produced in each instance (15 hours to 4 days). Eleven experiments were made with immune anti-pneumococcic serum injected into the spinal canal. Each animal first received 0.1 cc. of broth culture of the same strain used in the control series. The experiments showed that immune serum has a distinct though slight retarding influence upon the infection. When administered within two hours after inoculation it prevented the growth of the organisms in two cases. When given later the first injection seemed to retard the development of the disease, but this influence was of short duration, and rapid development and death followed. Nineteen animals were treated under exactly the same conditions of inoculation with a mixture made up of 0.1 cc. of 1 per cent aqueous solution of Merck's or Kohlbaum's sodium oleate, 0.2 cc. immune anti-pneumococcic serum and 0.7 cc. of 5 per cent aqueous solution of boric acid. An injection of this mixture was usually made each day of the animal's life, or until the spinal fluid gave little or no growth of pneumococcus; 2 cc. were given at the first injection and as much thereafter as could be given without producing pressure effects, this rarely falling below 1 cc.

The time of beginning the treatment after inoculation varied from 4 to 48 hours. The average number of injections necessary was 5 or 6. Nine animals recovered and ten died. Three animals died of a "relapse," after apparent recovery. Three animals died very quickly after inoculation (22½, 31 and 33 hours), seeming to offer little or no resistance to the infection; one animal died, after 6½ days, of pneumonia; the meningitis was found at autopsy to be arrested.

These experiments show that the effect of the mixture of sodium oleate, antipneumococcic serum and boric acid is much greater than that of the immune serum alone. Lamar believes that the use of the mixture in human infections may prove of great value, since it has been shown that the number of strains of pneumococci is not large.

JAMES F. CHURCHILL.

## BLOOD

**Levison: The Treatment of Hæmorrhagic Conditions with Normal Human Blood Serum.**  
*Inter. M. J.*, 1912, xix, 934.

By Surg., Gynec. & Obst.

Levison mentions fifteen or twenty diseases in which hæmorrhage is a symptom, but he limits his remarks to those diseases of childhood in which hæmorrhage dominates the picture — hæmorrhagica neonatorum, hæmophilia, Buhl's disease, and Winkel's disease. In none of these diseases has the pathology been clearly worked out; indeed, the very diseases themselves have not been accurately classified. It is probable that various types of bacterial

organisms may be the etiological factors, but this is not definitely proved.

It is essentially true that one of the principal factors in all these diseases is a disturbance of the chemistry of the blood, leading to instability in the coagulation mechanism. The chemistry of normal coagulation is not clearly understood. Levison discusses in detail the rôle of thrombin, prothrombin, kinase and calcium salts, and correlates the important facts from literature bearing on this subject, without, however, adding any new experimental data.

All efforts to check hæmorrhage by the use of calcium, gelatin, adrenalin, and styptics have proven unsatisfactory, and furthermore, the use of animal serum has not furnished desired results. In the use of animal sera, one runs all the risks that are inherent in the administration of an alien serum. Human serum, on the other hand, never produces toxic results and should invariably be used in all hæmorrhages of childhood. Levison advises that large quantities of serum should be employed and that the use of the serum should be continued until the hæmorrhage has ceased.

M. G. SEELIG.

## BLOOD AND LYMPH VESSELS

**Hesse: The Use of Blood-Vessel Sutures in the Resection of Aneurysms of Peripheral Vessels, in Traumatism of Vessels, in Varicosity and in Angiosclerotic Gangrene, Based on 58 Cases.** *Roussk. Vrach*, 1912, xi, 1798.

By Surg., Gynec. & Obst.

1. *Blood-vessel suturing of cases of aneurysms.* Case 1. Zeidler (consult *J. de Chir.*, 1911, vi, p. 46): arteriovenous aneurysms of the femoral vessels. Separation of the two vessels; separate suture of the two ends. Cure. Cases 2 and 3. Very large aneurysmal sacs. After ablation, the loss of substance of the artery was too great to allow a junction of the two ends. It was impossible to interpose a segment of the long saphenous vein because of its small caliber. The ends of the artery were ligated separately. Cure followed in both cases.

2. *Blood-vessel suture in cases of vascular lesions.* Hesse has found occasion to use suture in only one case of accidental wound, and in this case the anterior portion of the cubital artery, which was very large, had been severed. He remarks that ligation of the wounded artery would have been simpler than suturing in this instance. Four cases of suture of vessels injured in the course of operation are reported. The femoral artery and the femoral vein were each twice sutured with complete success.

3. *Blood-vessel sutures in case of varicosities.* Fifty-one cases are reported in which Delbet's operation was performed. There was one death; all the others recovered, with excellent functional results, 2½ years having intervened in some of the cases.

4. *Blood-vessel sutures in angiosclerotic gangrene.* In this case an old man showed beginning senile



gangrene in his left leg, accompanied by very severe pain. The pulse was not perceptible in the popliteal fossa and the foot was cold. The arteriovenous anastomosis was performed between the femoral artery and the long saphenous vein, but a small tear in the wall of the vein led to a hæmorrhage, and upon the application of suture an obliterating thrombus was formed in the vein at this point.

Hesse incised the vein and removed the thrombus, but it at once reformed. He then undertook to use the femoral vein for a new anastomosis. As in this subject two femoral veins were present, he was enabled to perform a terminolateral anastomosis with one of them; the vein at once began to pulsate and, as is usual in these cases, an immediate improvement was noted. The limb became warm again and the pains diminished. This improvement lasted for 1½ months, during which time the gangrenous portions became demarcated and were removed. Then the condition became worse and it proved necessary to amputate the limb. It was noted on operation that venous blood flowed from the veins and that no pulse was present in the femoral veins. The lumen of the artery was filled with atheromatous material. Hesse states that Wieting's operation is inefficient, and that such improvement as is seen following it (lessening of pain and warmth of the limb) is due, not to the re-establishment of circulation, but to the stasis which follows the stoppage of the venous outflow.

M. C. PINCOFFS.

### POISONS

**Burnet: The Virulence of Bacilli Tuberculosis and the So-Called Attenuated Forms of Tuberculosis** (La virulence des bacilles tuberculeux et les tuberculoses dites atténuées). *Ann. d. l'Inst. Pasteur*, 1912, xxvi, Nov.

By Journal de Chirurgie.

There are attenuated forms of tuberculosis. This is proved by the exquisite susceptibility of primitive people, by the relative resistance of Europeans to tubercle bacilli, and by the fact that man may succeed in overcoming a benign infection which leaves him vaccinated. The author attempts to prove the existence of bacilli of attenuated virulence. Are the bacilli which cause local tuberculosis (joint, cutaneous, glandular, etc.) bacilli of attenuated virulence? No. Burnet has injected these bacilli in susceptible animals, and they have proved to be as virulent as those of sputum, and in some cases to possess even greater virulence. Are these bacilli of attenuated virulence of the bovine type? No. Notwithstanding certain facts published in foreign journals, in 35 cases of bone, joint, and cutaneous tuberculosis, and in 23 cases of glandular tuberculosis, he was not able to detect in a single instance the presence of bovine bacilli. In many cases we may seek the explanation either in the inoculated quantity of microbes, in the greater or less resistance offered by the soil, or in attenuations of as yet obscure cause of germ virulence. He admits that the

gravity of the tuberculous infection depends, not only on the quantity, but on the quality of the incorporated germs. He shows that inoculation of tuberculous material often remains negative, and still in these cases there is neither absence of bacilli nor presence of acid-resisting agents. These are, therefore, attenuated bacilli, either from the time of their penetration into the organism or from a process of cure in the organism injected.

He reports a case of a young man 19 years old who since childhood has had a torpid tuberculosis upon the external surface of the foot, leg, and knee. In inoculating guinea pigs and monkeys with some of the diseased tissue, he found that the microbes produced in these animals only absolutely benign lesions, which they survived a long while, differing in this respect from the rapid death of control animals inoculated with virulent bacilli.

There seems to exist a tuberculous subflora, the rôle of which in tuberculous disease is as yet undetermined. These facts explain the cases of spontaneous immunity to tuberculosis and confirm the possibility of artificial vaccination. P. GRUET.

**Warfield: Bismuth Poisoning.** *Am. J. M. Sciences*, 1912, cxliv, 647.

By Surg., Gynec. & Obst.

After reporting and discussing the symptoms and the theories of bismuth poisoning as observed and promulgated by Kocher, Feder-Meyer, Mory, Dalché and others, some of whom carried out experiments with bismuth salts, the author reports a case of poisoning from injection of about two ounces of bismuth subnitrate into an iliopsoas abscess. The patient, a white girl of 9 years, was admitted to the hospital September 9, 1911, complaining of a sore mouth. Her surroundings were of a squalid nature: one of her parents had syphilis before the child was born, and in all probability the other parent was infected likewise; one sister, aged 7, had died of generalized tuberculosis. The patient had never been a robust child.

A diagnosis of tuberculosis of the spine was made. Treatment for one year on a Bedford frame followed, during which time an iliopsoas abscess developed. This was incised. In November, 1910, about two ounces of Beck's paste was injected into the resulting sinus, which promptly closed, no paste having been extruded. Within two weeks a black line appeared on the gums. This has persisted, fluctuating in intensity. In August, 1911, an ulcer appeared on the cheek, opposite the upper second molar. Later, ulceration occurred along the right side of the tongue. In the routine examination it was noted that the lymphatic glandular system was generally enlarged, especially the cervical glands. The breath was very fetid, the tongue coated, with many carious teeth in the lower jaw, the front teeth being rough on the cutting edges but not notched; on the gum margins of both jaws, inside and out, was a dark violet line 1½ cm. in depth, which did not reach quite to the free border. The line was



smooth and somewhat glistening. The teeth were not loosened and there was very little pyorrhœa alveolaris.<sup>1</sup> The tongue was heavily coated, and along its whole right edge was a bluish black discoloration about 2 cm. wide. Along the central line of this patch was a whitish opaque diphtheretic membrane; on the buccal surface were two discolored plaques, one near the angle of the mouth. A whitish necrotic membrane covered about half the surface of the ulcer.

An X-ray of the lumbar region showed an irregular shadow corresponding to the paste, which did not appear to be much encapsulated. The Naguchi reaction was negative on two occasions: R. B. C., 5,600,000; W. B. C., 14,600; H. B., 90 per cent. The leucocytosis was evidently due to an alveolar abscess. The urine, of 10.20 to 10.30 specific gravity, showed neither albumin nor casts and no bismuth.

The patient gradually improved, and on February 19, 1912, was discharged, the tongue being normal, slight discoloration at the seat of the ulcer, and the line on the gums still present.

From the cases reported, the author deduces rather a typical picture which differs from lead or mercury. He recognizes three stages — the first, benign, when the violet black line only is present; second, moderating severely, with stomatitis, more or less acute, followed by a chronic condition, with discoloration of the gums and tattooing of the buccal mucosa; third, a severe form characterized by a more intense stomatitis, the gum margins ulcerated, secondary infections supervening and general symptoms present. Characteristic of bismuth poisoning is the violet tinge to the line, and in the more severe forms the presence of a diphtheretic membrane. The plaques appear anywhere on the mucous membranes, preferably on the parts in contact with the teeth. A cessation of bismuth absorption brings about an immediate improvement. Albumin, casts, and bismuth may be found in the urine. The author concludes that the poisoning is due to the bismuth, and not to the nitrates or other salts, such as lead or mercury.

H. A. POTTS.

## SURGICAL THERAPEUTICS

**Schepelmann: Oil in Abdominal Surgery.** *Arch. f. klin. Chir.*, 1912, xxix, 4.

By Surg., Gynec. & Obst.

The author concludes from the results of his researches on animals with intraperitoneal injections of camphorated oil, olive oil, and oil in which bactericidal substances were incorporated (solimenthol 25 per cent), that the use of oil in abdominal surgery is not warranted in the human being until more work in this direction has been done to justify such therapy.

E. S. TALBOT, JR.

<sup>1</sup> The abstractor takes the liberty of calling attention to the frequent misuse of the words "pyorrhœa alveolaris"; this appellation belongs to phædenic pericementitis.

**Royster: Wright's Solution in Infected Wounds.**

*Internat. J. Surg.*, 1912, xxv, 343.

By Surg., Gynec. & Obst.

The imperfect drainage of wounds by rubber tubes, gutta percha and cigarette drains led the author to try Wright's solution, or lotio sodii citratis. It has the following formula: Sodii citratis, 11 grains; sodii chloridi, 20 grains; aquæ, q. s. ad, 1 fluid ounce.

The sodium citrate dissolves the plasma or albuminous substance which is thrown out from the inflamed tissues, while the sodium chloride by its osmotic action keeps up a continuous flow of serum, which washes away the wound products. In other words, the sodium citrate prevents coagulation and the sodium chloride produces irritation.

The author has used the lotion in dense phlegmons, which have cleared up remarkably without the usual multiplex incisions. He recommends it in gunshot wounds, infected hands, arms and legs; also in empyema and cellulitis.

The manner of applying the solution is very simple. It is used cold as made up according to the formula and poured into a clean basin. Several layers of gauze are saturated in the solution and laid over the parts. A covering of oiled silk may or may not be employed; a thick dry dressing may be sufficient. The gauze next to the wound is to be kept moist for such a time as may be necessary. He has never seen any untoward irritation and has not heard patients complain of any pain from the application. He does not believe the solution should be continued beyond the point of cleansing the wound and getting rid of all the products of infection. In his experience the solution rather retards healing after its work is done, and it is wise to discontinue its use when the wound has ceased to discharge and when granulations begin to appear.

E. L. CORNELL.

**Lieber: Burns and Their Treatment** (Die Verbrennungen und ihre Behandlung). *Beitr. z. klin. Chir.*, 1912, lxxxi, Nov. By Surg., Gynec. & Obst.

Many theories have been advanced to explain the cause of death in burns. Of the older ones grave damage to the blood, destruction of the skin — an important organ for the excretion of poisons, embolic phenomena, and fat embolism may be mentioned. Newer theories attempt an explanation upon the basis of the formation of a toxic substance. The reflex theory of Sonnenburg and that of Laskewitsch, namely a reflectory lowering of vascular tonus, great dilatation of the vessels, and resulting dissemination of heat leading to subnormal temperature, deal with phenomena which in reality are due to shock. Falk assumed disturbances in the mechanism of the circulation due to dilatation of the peripheral vessels, with resulting increased work for the heart and final paralysis. Paralysis of the heart as a sequence to excessive heat was assumed by others. Lesser and others emphasize the damage to the blood in the form of an acute functional oligocythæmia. The red



blood corpuscles become unfit as oxygen carriers. Klebs showed first that rabbits die when their ears are heated to 56 to 60° C. by immersing in hot water. If the ears are rendered bloodless before the procedure, much higher temperatures may be employed with immunity. Klebs believed this to be due to thrombo-embolic phenomena. These findings were not verified in man.

According to the intoxication theory the poison may be formed in the blood, in the skin, or may be the result of a change in metabolism indicated by increased toxicity of the urine. The rabbit ear experiments of Klebs can be explained by assuming the formation of a poison in the blood. Even the parabiosis experiments recently performed cannot rule out this possibility. In parabiotic animals intoxication of one also produces symptoms in the other. The animals were connected after the symptoms of intoxication had disappeared. No changes in the blood occurred in the sound animal. This merely proves that the toxic substance is not a blood-poison; but does not exclude the blood as a source of the poison. Dieterichs maintained that the damaged red blood corpuscles act as antigenes in the individual's own blood, producing specific hæmolysins. This has been disproved by subsequent experimentation. Burkhard found that the spontaneous hæmolysis occurring in the blood after burns is a consequence of direct heat action upon the erythrocytes. Another group of investigators thought the skin to be the seat of toxin formation. When fatal burns were produced in animals and the burned portions of skin were at once removed, the animals survived. Control animals died. Parascandolo arrived at the conclusion that a cytotoxin closely related to snake poison is produced in the organs of burned individuals. Weidenfeld thought to explain the relationship between the amount of skin destroyed and the prognosis upon this toxin theory. He found that this toxin is soluble in water. Hymanns reports a case which is equivalent to a parabiosis experiment. A primipara gave birth to a child immediately after suffering a severe burn. The child was asphyctic and remained comatose long after the cyanosis had disappeared, and while respiration and heart action were normal. The mother also was comatose during labor. She had no recollection of any pains, despite being a primipara. It is quite apropos to assume that the toxin produced by the burn caused the coma in mother and child. Others endeavored to find the poison by analysis of the products of metabolism. This was based upon the discovery of Reiss that the urine of burned persons is poisonous and causes the same symptoms as the burn itself. Pfeiffer showed that not only the urine of burned persons but also their serum is poisonous. The toxicity of these ascend in different curves. The urine reaches its greatest toxicity in 24 hours; from then on this rapidly decreases, while the toxicity of the serum gradually and constantly increases up to the time of death.

These numerous experiments and theories show one fact only with certainty, namely, that death following burns is due to an autointoxication. The nature of the poison has not been determined. Changes in the kidneys are most frequent — hyperæmia, parenchymatous degeneration, finally nephritis, with granular and blood casts. Heart and liver are also involved. If the toxin acts for a longer period of time ecchymosis in the mucous membrane of the gastro-intestinal tract and duodenal ulcers is observed. These changes occur in 20 per cent of the cases according to Birch-Hirschfeld. All these findings resemble much those seen in rapidly fatal cases of poisoning and in the infectious diseases. The nature of the changes is identical with those in the infectious diseases. Valentin found desquamation and necrosis of the cells in the thyroiditis, exactly as in scarlet fever, measles, and diphtheria.

*Symptoms and clinical course.* Subnormal temperature is a sign of shock, and does not occur any oftener in burns than in other grave injuries. Fever is a frequent symptom. The temperature shows a characteristic curve. Fever was present in 144 cases of 188 (76 per cent). The time of its appearance ranged as follows: First day after burn, 48 cases; second day after burn, 32 cases; third day after burn, 22 cases; fourth day after burn, 10 cases; fifth day after burn, 1 case; sixth day after burn, 2 cases.

The rise of temperature is due to the toxin and is not caused by infection. The temperature shows a curve which permits its distinction from fever due to infection. Infectious rises are of much longer duration. Toxic fevers are associated with symptoms which are absent in infections. The patients are apathetic, even somnolent; in grave cases singultus and vomiting are present. These symptoms disappear with the initial toxic fever. The prognosis is worse in children. Weidenfeld has shown that the body surface of the child is disproportionately large in comparison with its weight. If one third of the surface of an adult can produce enough poison after a burn to cause the death of the patient, one ninth of the surface of a child burned may produce the same effect. Death as a direct consequence of a burn occurs within the first six days. Later occurring fatalities are to be attributed to complications. In rare instances children die on the twelfth or fifteenth day while apparently convalescing very nicely. Autopsy gives no satisfactory explanation of the cause of death. These cases have been attributed to anaphylactic shock. However, the autopsy findings characteristic of anaphylactic shock were absent in these patients.

Lieber describes the treatment used in the service of Lotheissen during the years from 1902 to 1912. This latter is the following: for burns of the first degree, careful cleansing with sponges dipped in benzin, and subsequently application of sterile borated vaseline or talcum powder with sterile gauze. For burns of the second degree, the same cleansing; basal incision and evacuation of blebs, application



of novozodine powder and anæsthesin, sterile gauze. A bath is given every second day if the patient's condition permits. Removal of the dressings during the bath. The treatment of burns of the third degree is practically the same. General treatment consists of caffeine, camphor and digalen subcutaneously, normal saline up to 4 litres daily, subcutaneously or per rectum. Large quantities of fluids are given by mouth. Morphin is absolutely avoided, as it interferes with the heart action. The continuous bath is likewise no longer employed. Some case histories of extensive second and third degree burns illustrate the efficacy of this treatment. The mortality has decreased under the new form of treatment.

E. C. RIEBEL.

### ELECTROLOGY

**Haudek: Radiological Demonstration of a Gastrocolic Fistula.** *Wien. med. Wchnschr.*, 1912, lxii, 3104. By Surg., Gynec. & Obst.

The patient, a male 32 years of age, gave a history of long standing stomach trouble. There was strong evidence of malignancy, although a positive diagnosis had not been made. An X-ray picture after the ingestion of a bismuth meal showed that the jejunum was not normally filled, and the shadow which was obtained on the screen appeared to correspond to the transverse colon. The patient was then given another test meal. After six hours Haudek found that the stomach and the small intestine were empty, but that the colon was filled with bismuth as far as the sigmoid flexure of the rectum. A new radioscopic examination proved conclusively that there was an abnormal communication between the stomach and the transverse colon. This was shown by the presence of an abnormal shadow 1 cm. long and  $\frac{1}{2}$  cm. wide. Since the pyloric portion of the stomach did not fill, and the duodenum and small intestines were practically free from food, a cancer of the stomach associated with a secondary gastrocolic fistula was assumed, although clinically there were none of the classic signs of this fistula. The patient did not vomit fecal matter, nor was there fecal matter in the stomach; profuse diarrhoea was absent. An exploratory incision revealed the presence of a scirrhous carcinoma of the pylorus, which adhered to the transverse colon. The involvement was so extensive that removal was out of the question. A post-mortem operation revealed an abnormal communication between the stomach and the transverse colon.

In a work published in 1900, Zweig gathered 61 cases of gastrocolic fistula. In 35 of these there was cancer of the stomach; in 14, gastric ulcer; in 5, cancer of the colon; in 5 there was a localized peritonitis; once a tuberculous ulcer, and once the fistula was congenital. Haudek has observed two further cases of gastrocolic fistula. One of these, associated with carcinoma of the stomach, opened into the colon; the other, which had been operated

by von Eiselsberg in 1907, was associated with a secondary peptic ulcer.

A. B. KANAVEL.

**Herzheimer: Cure of a Case of Sarcomatosis of the Skin by Thorium-X** (Heilung eines Falles von Hautsarkomatose durch Thorium-X). *München. med. Wchnschr.*, 1912, l, 2563.

By Surg., Gynec. & Obst.

In the clinic for diseases of the skin in Frankfurt a R., 25 patients were treated for psoriasis, dermatitis exfoliata, and carcinoma of the skin with up to seven injections of thorium-X, given at weekly intervals, without any accidents resulting. In the case reported in detail by the author, the diagnosis was multiple sarcoma of the skin in a man 58 years old. Injections of thorium-X in doses of 1000 electrostatic units were given once a week; after the first injection the condition was unchanged; after the second the smaller nodules on the head and extremities grew visibly smaller and the largest, especially on the thorax, showed a central softening. After seven injections the skin of the entire body, as well as the mucosa of the oral cavity and pharynx, were perfectly normal. There is no doubt that in this case the sarcomatosis was cured by thorium-X injections, given in small doses at long intervals under slow disappearing pigmentation. Blood examinations showed that lymphocytosis excited by the thorium-X played an important part in this cure. It remains yet to be seen whether the result will be permanent.

E. S. TALBOT, JR.

**Hertz: Common Fallacies in the X-ray Diagnosis of Disorders of the Alimentary Canal.** *Arch. Rönt. Ray*, 1912, xvii, Nov.

By Surg., Gynec. & Obst.

**Gastric stasis.** The presence of bismuth in the stomach four or more hours after the bismuth meal is indicative of stasis only when nothing else is taken up to the time of examination.

**Duodenal kinks.** Conditions described as such are invariably the result of posture or the accelerated evacuation of the stomach associated with such conditions as duodenal ulcer.

**Ileac kink.** This condition is often simulated by obtuse bends of the lower ileum upon different planes, and the usual temporary obstruction there due to the tonic contraction of the ileo-cæcal valve interpreted as stasis.

**Kinks at the hepatic and splenic flexures.** Wide forward and backward bend at these parts, pictured on a single plane, is responsible for error.

**Intestinal stasis.** Lack of previous cleansing may cause stoppage of bismuth by mechanical obstruction offered by fecal concretions.

**The bismuth meal.** Too much bismuth given may cause distortion by its own weight. Two ounces is sufficient.

The bismuth compound used may affect the rate of motility. The carbonate tends to neutralize the acidity of the stomach contents, and thus retards the time of its evacuation more than inert salts,



such as the oxyiodide of bismuth or barium sulphate. Psychic influences govern the movements of the gastro-intestinal tract. Palatable mixtures give more normal findings than distasteful ones.

ADOLPH HARTUNG.

**Hänisch: The Röntgen Examination of the Large Intestine.** *Arch. Rönt. Ray*, 1912, xvii, 208.  
By Surg., Gynec. & Obst.

The author deals especially with stenotic conditions of the large bowel caused by tumors in or adjacent to it, by kinks, adhesions, and twisting, and by nervous spasm. He advocates fluoroscopic examination with a bismuth enema, observing it both as it enters and as it is evacuated. When points of special interest are visible he supplements his examination with the radiogram. He considers duplicate similar findings absolutely essential for accurate conclusions.

Interference with the flow of the injected bismuth forms the basis of the value of this method in diagnosis. In the case of tumors, the defect is constant and definite, whereas spasms give variable findings. Adhesions usually cause a gradual narrowing of the

lumen extending over some distance. The presence of kinking or twisting of loops, causing obstruction to the flow, may be diagnosticated where position or manipulation markedly alter the apparent stenosis.

After citing a number of cases, in most of which his findings were verified by operation, the author reaches the conclusion that his method of examination aids materially in ascertaining pathologic conditions of the large intestine and, used in conjunction with the clinical symptoms and history, gives reliable information regarding certain obscure bowel conditions.

ADOLPH HARTUNG.

#### SURGICAL DIAGNOSIS

**Vogel: Phenolsulphophthalein in Diagnosis of Kidney Lesions.** *Berl. klin. Wchnschr.*, 1912, xxxvi, Nov.  
By Surg., Gynec. & Obst.

The author confirms the work done by Rountree and Geraghty in Dr. Young's clinic, Baltimore. He finds the test valuable, but it takes at least four hours for the excretion of the maximal sum of the substance (60 to 85 per cent), and 14 hours as total time.

BUCHSBAUM.



## GYNECOLOGY

### UTERUS

**Baldwin: The Cure of Prolapse of the Uterus and Bladder by Plastic Operation.** *N. Y. M. J.*, 1912, xcvi, 952. By Surg., Gynec. & Obst.

The author's operation is a modification of the one described by Emmet and is applicable to all degrees of prolapse, being best suited, however, to women beyond the child-bearing period. He has done it on a few before that time. The operation is done with the patient in the Sims position, using the Cleveland speculum. After curettage and any necessary work on the cervix, the uterus is held in normal position by suturing the anterior lip to the fenestra in the tip of the speculum. Three points are now selected on the anterior wall, one on each side of the cervix and one just below it. The lateral points are the important factors. They are well out under the bases of the broad ligaments, and some force is necessary to bring each point to the middle of the cervix. These points are then denuded of mucous membrane for about one half to three quarters of an inch and their lateral edges united, making a broad surface of denudation. Two silver wire sutures are now passed deeply under the denuded area — the author lays stress on passing the sutures deeply — and are twisted, making a firm bridge below the cervix, firmly holding it in the hollow of the sacrum. The cystocele is then attended to by denuding two crescentic strips down the antero-lateral vaginal walls and suturing with silver wire. A perineorrhaphy is then done of whatever type the perineum requires. Up to January, 1909, the author operated upon 56 women. These were investigated, 36 being heard from. Of these 36 there were only two failures. One of the failures was in a woman who bore two children subsequently. Subsequent operations have not been tabulated.

The advantages claimed by the author are that this operation restores as nearly as possible the size and shape of the vaginal canal, that it is free from operative mortality, is attended with very little suffering, and achieves a large percentage of symptomatic and anatomical cures. GORDON GIBSON.

**Goffe: An Operation for Extreme Cases of Prolapsed Uterus with Rectocele and Cystocele, Based on Anatomical, Physiological, and Dynamic Principles; with Report of Cases.** *Med. Rec.*, 1912, lxxxii, Nov. By Surg., Gynec. & Obst.

A knowledge of the cause of prolapsed uterus with its accompanying complications is the first step in solving the problem of its relief. We now know that the support of the pelvic organs conforms to nature's general plan of holding organs in place, which is by suspension from above by means of ligaments.

The great force to be controlled is intra-abdominal pressure. This is done by two systems of reflecting and deflecting planes. One is represented by the uterus and its broad ligaments, and the other by the pelvic floor. These two planes receive, deflect, and distribute this force in such a way as to direct the resultant into the line of expulsion, i. e. the pelvic outlet, and at the same time preserve visceral support and equilibrium.

In cases of procidentia in which the uterus is retained, i. e. previous to menopause, the deflecting plane is maintained by shortening both the round and uterosacral ligaments, the uterus should not be fixed in position. By plicating the ligaments, their functions are retained and the deflection of intra-abdominal pressure secured. To relieve the cystocele, the bladder is dissected free from all its attachments except that of the peritoneum. It is then carried up and stitched to the anterior face of the uterus and broad ligaments in such a way as to take in all the slack in the base of the bladder and restore the normal fixation of the trigone. The rectocele is relieved by restoring the floor of the pelvis by the usual muscle operation. When the rectocele is extreme, the anterior wall of the rectum is laid bare previous to the restoration of the levator muscles and plicated with one or two running sutures of chromic catgut. In patients at or beyond the menopause the uterus is removed and the deflecting plane is restored by stitching together the broad ligaments across the pelvis, care being taken to secure in these stitches all the supporting ligaments of the uterus. In this way the ligaments continue to functionate and thus preserve the deflecting properties of this plane of tissue. Upon the anterior face of this plane the bladder is spread out and stitched as previously described.

Twenty-nine cases are reported in detail. Some of the cases were of seven years' standing, others of four and three, and the balance of over two years' standing. Twenty-four had been subjected to examination just previous to the reading of the paper. Among these cases are 11 patients between 50 and 60 years of age, 4 between 60 and 70, and one at the rare old age of 75 years at the time of operation. In not one of them had there been sufficient reaction following the operation to demand any departure from the regular routine of after treatment. Convalescence has been surprisingly smooth. In not a single case has infection occurred. Catheterization as a rule is not continued beyond the second day. If prolonged, the patient is gotten out of bed and on the commode by the fifth day.

In estimating the indications and the value of this operation, the following points were considered:



(1) The permanency of results, (2) the age of the patient in reference to shock, (3) the character of the convalescence, and (4) the restoration of physiological functions. Of the 24 who presented themselves for examination, there was not one that showed the slightest tendency to recurrence, and all gave most favorable reports of improvement, not only in their local condition but in their general health.

In regard to the bladder, 3 who had had annoying incontinence previous to operation reported a cure; 5 reported a slight irritability of the bladder lasting from three to five months after the operation, but not present since. Dr. Osgood, the cystoscopist at the Woman's Hospital, has cystoscoped the bladder of all patients subjected to this operation both before and after operation. He reports complete restoration of normal condition in the interior of the bladder. Two of the patients examined at the office had passed through confinement two years after the operation. One had twins; both had normal labors, and in neither one was there the slightest lesion of any kind. All the different procedures in the operation had held perfectly.

**Vineberg: End Results with Various Operative Procedures for Prolapsed Uterus and Extensive Cystocele Prior and Subsequent to the Menopause.** *Am. J. Obst., N. Y.*, 1912, lxvi, Nov. By Surg., Gynec. & Obst.

This article is written with particular reference to the "vaginofixation" or "interposition" operation on the uterus. The author briefly reviews the history of vaginal operations in America for displacements of the uterus. The technique of the interposition operation is not described, but several points are emphasized.

"In extensive cystoceles it is essential, in order to obtain a good permanent result, to separate the bladder freely medially and laterally from the cervix and base of the broad ligaments. To accomplish this the 'bladder pillars' have to be severed between two ligatures. To merely separate the bladder in the median line, as advised by Watkins and others, invites a recurrence of the cystocele at the outset, for it leaves pockets of the prolapsed bladder at either side of the cervix, which in a short time increase in size, and form what might be called a double cystocele. The writer deems it important also, with a very few exceptions, to perform a high amputation of the cervix, for when this is not done the cervix acts like a wedge and a recurrence of the prolapse is very prone to occur."

Where the uterus is very large and thick, Vineberg prefers to do a subtotal excision of the uterus, "leaving as much of the lower segment of the uterus as possible, together with the cervix, and employing this residue of the uterus as a *pelotte* for the bladder by suturing it to the vaginal wall, as near to the urethral meatus as possible."

Of 45 cases observed for two years or more, "in not a single instance has there been a recurrence of the prolapse or of the cystocele. In 3 cases there was

a recurrence of the rectocele about 1½ inches above the posterior commissure, showing either a faulty technique in the posterior colporrhaphy, in that the denudation was not sufficiently wide at the upper part, or a too early absorption of the deep catgut sutures. Latterly the writer has employed chromicized catgut for these sutures."

The author next describes his vaginal operation during the child-bearing period, vaginal suturing of the round ligament, originally published in 1896. Seven cases thus operated upon have been traced. Results in all but two were excellent. A recurrence of the cystocele took place in one and a slight protrusion of the vaginal wall in the other. One patient passed through subsequent pregnancy and spontaneous labor without a recurrence.

Vineberg has used a modification of Olshausen's method of suturing the round ligaments to the abdominal wall in his abdominal work for procidentia during the child-bearing period. The results have invariably been so good that he has been content to employ it for the past fifteen years to the exclusion of all other methods. It must be accompanied, of course, by suitable plastic repair of the vaginal walls, the technique corresponding to the modern one for hernia. Of 17 cases under observation for two years or longer, there have been 3 deliveries at term, one patient having two children and another having one. Pregnancies, labors, and puerperia were normal in every respect. In none of these 17 cases has there been a recurrence of the procidentia or of the cystocele.

CAREY CULBERTSON.

**Critchlow: Comparative Results of the Various Operations for Supporting the Retrodisplaced Uterus, and the Best Method.** *Chironian*, 1912, xxix, 193. By Surg., Gynec. & Obst.

The author briefly outlines development of surgical measures for this condition, presenting the claims for the Alexander, Baldy-Webster, the Gilliam and its several modifications, and notes the various procedures by the vaginal route.

His conclusions are that no one operation can be labeled "the best"; selection of method depends on individual conditions; he is strongly committed to the intra-abdominal route in preference to the Alexander or any of the vaginal methods; great emphasis is laid on the value of exploration of the whole abdomen, examining the appendix, gall-bladder tract, and stomach. Some cases fail of symptomatic cure by operation because of failure to note that the retroversion was only a phase of general abdominal ptosis, demanding nephropexy, colopexy, or gastropexy.

Of the various intra-abdominal methods for correcting retroversion the author prefers implanting the round ligaments in the abdominal wall after the method of Gilliam as modified by Crossen. Its advantages are: it is intra-abdominal; it uses the strong proximal portion of ligament; the resultant pull is forward rather than lateral, as in Alexander;



elevation and support are sure; no abnormal bands endanger the intestine as in ventral suspension; pregnancy may safely follow.

The greatest drawback of the Alexander operation is its extraperitoneal feature, which prevents exploration. It may be used if some reason exists which contraindicates abdominal section, provided complications can be excluded.

**Frankl: An Argument for the Promotion of Early Operation in Cancer of the Uterus** (Ein Vorschlag zur Forderung der Frühoperation bei Gebärmutterkrebs). *Wien. klin. Wchnschr.*, 1912, xxv, 1897. By Surg., Gynec. & Obst.

This is the report of cases from the Schauta clinic in Vienna from 1901 to 1912 inclusive. It includes 1007 cases, of which 498 were operable and 34 were beginning cases. The tables will probably demonstrate the results of this operation better than anything else would.

TABLE I

Year	Total number of cervical cancers observed	Operated according to Schauta	Operated according to Wertheim	Total number of beginning cervical cancers	Beginning cases, free from recurrence after 5 years	Beginning cases, deaths	Beginning cases, dead from other diseases or lost track of
1901-02	116	47	—	1	1	—	—
1902-03	95	29	—	4	3	1	—
1903-04	88	37	—	1	1	—	—
1904-05	96	49	—	3	1	—	2
1905-06	82	49	1	4	2	—	2
1906-07	87	47	6	1	—	—	1

TABLE II

1907-08	84	28	13	3	2 <sup>1</sup>	—	1
1908-09	94	50	4	3	2 <sup>2</sup>	—	1
1909-10	88	59	2	4	3 <sup>3</sup>	1	—
1910-11	80	—	—	6	—	—	—
1911-12	90	—	—	4	—	—	—

<sup>1</sup> Examination after 4 years.

<sup>2</sup> Examination after 3 and 4 years.

<sup>3</sup> Examination after 3 years.

As a means of early diagnosing of this condition he advises the establishment of stations in every district throughout the Austrian Empire where the tissue from curettements can be examined, and he thinks in this way early cases of cancer can be diagnosed which would otherwise be overlooked.

C. G. GRULEE.

**Wilcox: The Undeveloped Antelexed Uterus and the Sterile Woman.** *Chironian*, 1912, xxix, 183. By Surg., Gynec. & Obst.

The author showed that in the embryonic development of the tubes and ovaries the uterus was the last organ of the pelvis to be developed; that it was formed by fusion of the two tubes; that a partial transverse division of this tube produced the fundus and cervix, hence the tendency to a flail-like union between these two portions of the uterus.

The early development of the ovaries and the later development of the uterus make possible the undeveloped or infantile uterus with the presence of well-developed ovaries. The possessor, therefore, is not in any sense an asexual woman, but may be quite the contrary.

The majority of writers attribute an infantile uterus to an acute antelexion, due to a relaxed state of the uterine supports and a consequent deficient blood supply to the fundus. The author's theory is that the whole trouble is a developmental defect at the point where uterus and cervix join, but the real agent which tends to fix this helpless uterus in the acute antelexed position is not the relaxed round and broad ligaments, but rather a pair of rigid, undeveloped sacro-uterine ligaments, which, being inserted at the flail-like cervico-uterine junction, tends to lift the uterus much as one would lift a boy by the seat of his trousers. This makes it really impossible for the fundus to raise itself, and at the same time interferes materially with normal blood supply to that organ.

The heretofore recognized treatment has been cervical dilatation under ether, curettage, packing, stem-pessaries, massage, electricity, etc., all good and many times attended with success, but failing quite as often; and the failure is due not so much to a faulty method as to lack of perseverance.

The truth is, there is no "short cut" to a cure of sterility or dysmenorrhea due to an undeveloped, antelexed uterus. Patience and persistence of intelligent effort alone will conquer. The patient should be given to understand that it will require 6 to 18 months to cure her.

**Treatment.** First, dilate uterine canal under ether and ascertain condition of endometrium — if polypoid or fungoid, etc., curette, but only if such be present; ascertain if sacro-uterine ligaments are rigid — if so, massage and stretch them. Pack uterus canal with gauze tape, to remain 48 hours; then repack. Repeat every alternate day for four weeks; then see the patient twice a week, dilating as much as can be endured without ether each time for two months; then, as improvement follows, see her once a month for six months. Continue a year before giving up.

This treatment could be supplemented by intra-uterine galvanism; the massage should accompany these treatments until there is a material giving way of the rigid sacro-uterine ligaments.

In a large dispensary practice the author has followed this line of treatment with entire satisfaction to himself and his patients.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**Wilson: Gelatinous Glandular Cysts of the Ovary, and the So-Called Pseudomycoma of the Peritoneum.** *Proc. Roy. Soc. M.*, vi, 9. By Surg., Gynec. & Obst.

Up to 1911 the author had operated on 331 patients with tumor of the ovary, among which were 144 glandular pseudomucinous cysts, with



only 6 typical cases of pseudomyxoma of the peritoneum, or about 4 per cent. Gelatinous cysts of the ovary did not always give rise to pseudomyxoma of the peritoneum.

In addition to the cases already noted of the 144 pseudomucinous cysts, there were 5 unruptured firm gelatinous cysts. In one case, after removal of a right-sided cyst, in five months one developed in the left ovary.

Pseudomyxoma of the peritoneum occurs most frequently between the ages of 40 and 60. It is uncommon in single women and is more frequently found in married multiparæ. Menstruation is usually not affected. There is no way in these cases of making diagnosis of the exact nature of the condition.

The cyst under consideration is multilocular, filled with characteristic gelatinous material, transparent, homogeneous, and either colorless or faintly tinged with yellow or green. They are divided by a very delicate transparent connective tissue, thinner than the tissue proper and lined by columnar secreting epithelia. The Fallopian tube is generally normal and unaffected.

As to the gelatinous material, it is alkaline in reaction, swells up and gradually dissolves in normal saline solution and in weak potash, but is not soluble in acetic acid. In three cases it gave a positive test for pseudomucin. Toward the distal pole of the tumor the loculi became larger and the capsule thinner. The gelatinous substance has a tendency to be carried into the upper portion of the abdominal cavity, and is commonly found between the diaphragm and the upper surface of the liver, spleen, and stomach. The parietal peritoneum is thickened, opaque, and has lost its gloss. Occasionally parts of smaller transparent prominences, like boiled sago greens, are seen. Sometimes the endothelium of the peritoneum is intact, but more often it is lost; the filaments of this penetrate the gelatinous substance. In a certain number of cases true implantation of metastases occur. In one case there was found a metastasis in the lung.

The only method of treatment which affords any chance of success is surgical removal. This should be accompanied by copious flushing with normal salt solution, which loosens the jelly-like masses.

As to the outlook, it is grave. Tendency to recur is marked, even though it seems possible to remove the whole tumor. According to Strausmann, of 33 patients operated on, 16 died within four weeks. In 5 cases reported by Wilson, one of them in which there were true metastases remained well for two years and then died of a psoas abscess. Of the other cases, 3 remained well for eight, seven and two years, while the fourth was operated upon only in November, 1911.

Following this exhaustive treatise on the subject is a very careful and minute analysis of each case.

C. G. GRULEE.

**Auvray: Spontaneous Torsion of the Normal Tube and Ovary** (De la torsion spontanée de la trompe et de l'ovaire normaux). *Arch. men. d'obstét. e. d. gyn.*, 1912, July. By Journal de Chirurgie.

In this paper the author considers only torsions of the normal adnexa. He reports one case, a patient 14½ years old. Menses were established one year earlier. She was suddenly seized with right-sided abdominal pain, vomiting, with a temperature of 38° C. A diagnosis of appendicitis was made. After being treated medically for three weeks the patient was operated upon, and the appendix was found normal. An abnormal bloody discharge from the region of the internal genitalia led to their examination. The tube and ovary were found twisted and were resected. Histologically, the examination showed no chorionic villi and no anatomical change with the exception of an hæmorrhagic infarct.

The normal adnexa external to the abdominal cavity can be twisted. The condition is often mistaken for a strangulated hernia of the internal genitalia. It is usually noticed in very young children, and in some cases with the first appearance of a hernia. The twist may be from right to left or from left to right. It is difficult to determine its cause. It seems to be due to an interference of the venous circulation caused by compression at the level of the neck of the hernial sac. Clinically, a painful tumor of varying volume is found. At times functional disturbances are present (vomiting).

The normal adnexa may be twisted in the abdomen in the absence of pregnancy. These torsions are rare. The patients, usually young, have never previously complained of genital disturbances. The ovary may be twisted alone, or the tube and ovary may be twisted, equally or unequally. At first there is a sudden pain, and if the lesion is right-sided it is usually diagnosed as appendicitis. Rectally, one feels a pelvic tumor, but the information obtained by rectal examination does not enable one to make a differential diagnosis. The cause is uncertain. Torsion of the normal adnexa may occur during gestation. The condition in some instances has been associated with hæmatocolpos, or with hæmatometra due to vaginal imperforation.

L. CHEVRIER.

**Curtis and Dick: Concerning the Function of the Corpus Luteum and Some Allied Problems.** *Surg., Gynec. & Obst.*, 1912, xv, 588.

By Surg., Gynec. & Obst.

The report consists of a résumé of the literature and the results of original work on animals. The question of the relation of the corpus luteum to the insertion and development of the ovum has been a disputed one. Fränkel maintains that the development of the fœtus up to the end of the first half of pregnancy is dependent upon the corpus luteum. Mandl and others dispute this claim. The author's experiments bearing upon this question consist of the removal of both ovaries during the first two weeks of



pregnancy. This was followed in every case by absorption of the embryo. Removal of but one ovary usually resulted in normal development to term. If the continuation of pregnancy was made to depend upon an ovary transplanted into the abdominal wall before coitus, by the removal of the normally situated ovary, absorption of the embryo occurred. The results of the experiments indicate that the corpus luteum is necessary for the normal development of the foetus during the first half of pregnancy.

An attempt was made to produce an anticorpus-luteum serum by Beebe's nucleoproteid method. No evidence of immunization was obtained. Extracts of corpus luteum given hypodermically to animals from which the ovaries were removed in the first two weeks of pregnancy failed to maintain foetal development.

Experimental transplantation of ovaries failed to confirm the idea that successful homotransplantation is easily accomplished. Only two autotransplants out of 13 were successful, and only one homotransplant out of 21.

Careful observations on the weight and histological appearance of the adrenals in animals with ovaries removed failed to reveal any evidence in confirmation of the idea that the adrenals and ovaries mutually undergo compensatory changes when the function of the one or the other is below normal. Attempts to produce experimental rickets by transplantation of ovaries, as by others, failed.

**Davidson: The Transplantation of the Ovary in the Human Being, with a Record of Three Cases.** *Edinb. M. J.*, 1912, ix, 441.

By Surg., Gynec. & Obst.

The various phenomena, such as headaches, flushings and other nervous symptoms, characteristic of an early menopause brought about by removal of both ovaries on account of their diseased condition, can be treated only with much difficulty. Therefore, if transplantation of the ovaries is successful it should be the ideal method of treatment. The author cites three cases of transplantation of the ovary, — two of which were successful. After removal of the ovaries he immersed them in normal saline at blood heat. Then, after sewing the peritoneum, he embedded slices of the more healthy portions of the ovary in a slit in the rectus muscle. He sewed up the slit in the rectus with catgut. About the time of the patient's menstrual period there was a stiffness in the rectus muscle over the point of implantation. Bond, in a series of cases, showed that after one ovary was removed the other did not hypertrophy unless stimulated by pregnancy or sexual intercourse.

Following this line of reasoning, an ovarian transplantation should be more successful in a married woman. Further, the implantation should be near the pelvic blood-vessels to receive the benefit of the pelvic congestion.

J. E. LACKNER.

**Lawson: Aneurysm of the Uterine Artery.** *Am. J. Obst.*, N. Y., 1912, lxvi, Nov.

By Surg., Gynec. & Obst.

After reviewing the literature of seven previously reported cases of aneurysm of the uterine artery, the author reports his own case. The patient was a white woman 36 years of age, in her fourteenth pregnancy in fifteen years. She aborted in the fourth month, and ten weeks later was operated on by Dr. Bovée. A trachelorrhaphy was performed, during which operation there was a brisk arterial hæmorrhage on the left side of the wound. Recovery was uneventful. Three months later she again became pregnant, and enjoyed good health until her labor in March, 1910. After weak, infrequent pains she precipitated suddenly with a rather profuse hæmorrhage. The placenta was expelled spontaneously. For three days she appeared to be normal, but then began to complain of pain in the pelvis and left thigh. There was a slight chill, temperature 102, pulse 104. On the fourth day a sudden hæmorrhage occurred while the nurse was present, estimated at about 500 cc.; temperature 103, pulse 120. A second hæmorrhage came on a few hours later; she was tamponed vaginally and taken to the hospital. Here the tampon was expelled and followed by a violent hæmorrhage. The uterus and vagina were promptly packed, and patient was comfortable next day, temperature ranging from 99 to 100 and pulse from 110 to 130. At nine o'clock on the following morning hæmorrhage became profuse; repacking and stimulation were futile, death coming a few minutes later.

Upon autopsy a blood clot projected from the left side of the uterus about one inch above the external os, and a small fibroid was found on the anterior uterine wall. Upon removal of the uterus and its appendages, a sac 3 cm. in length by 2 cm. in width was found continuous with the left uterine artery and communicating with the uterine cavity by an opening 2 cm. by 1 cm. The sac was smooth and firm and contained a fresh blood clot. Section of this sac showed a dense fibrous tissue but no trace of an arterial coat. It was evidently a false aneurysm, resulting directly from injury to the uterine artery at the time of the operation for repair of the cervix one year previously. The rupture probably occurred on the fourth day after delivery.

CAREY CULBERTSON.

## VAGINA

**Vallois and Delmas: Kraurosis of the Vulva** (Kraurosis Vulvæ). *La Gynéc.*, 1912, xvi, 533.

By Journal de Chirurgie.

In a woman 28 years of age there was a total absence of the labia minora, all of the vestibular mucosa having the appearance of scar tissue. There was no apparent clitoris. In the bottom of an irregular funnel could be seen the very small inferior vaginal orifice. The etiologic factors were not definite. Syphilis or castration could not be invoked.



The case was not a post-operative kraurosis nor a red inflammatory kraurosis, but rather a simple white kraurosis. Perhaps a relation existed between the affection and the poor general and vascular development of this patient. The arteries were small and the sphygmomanometric pressure was 12.

An interesting feature of the case was that, though sexual act was incomplete and exceedingly painful, the patient became pregnant. As to the course to follow at the time of labor, it was decided to deliver through the natural channels after bilateral liberating incisions of the vulva. The perineal tears did not exceed the limits of the prophylactic incisions. The incisions were sutured with catgut in such a way as to permanently enlarge the vulvar orifice.

L. CHEVRIER.

**Hofbauer: Plastic Substitute for Vagina** (Ueber plastischen Ersatz der Vagina). *München. med. Wchnschr.*, 1912, I, 2506. By Surg., Gynec. & Obst.

The method of Häberlin and Baldwin, with certain modifications, is advanced for the formation of an artificial vagina. A movable loop of the small intestines of the colon is resected and left connected with its mesentery; anastomosis of the bowel is then done; the resected piece is displaced downwards and its upper end is closed, the lower end being sutured to the vulva; or a double loop is formed with the resected piece of the bowel, the lower top of it opened and fastened to the outer skin.

**Taussig: Surgery of the Female Urethra.** *J. Mo. St. M. Ass.*, 1912, ix, Nov.

By Surg., Gynec. & Obst.

The author considers under this title three special topics: (1) surgery of chronic skenitis, (2) treatment of urethral cancer, and (3) relief and cure of urinary incontinence.

Chronic skenitis often results in retention cysts or abscesses that require incision, and sometimes extirpation. In cases of beginning retention of pus or mucus in these ducts they may be incised with a delicate probe-pointed scissors. To expose the openings of the ducts the writer uses the ordinary Outerbridge intrauterine pessary.

Cancer of the urethra is rarely curable. Taussig reports four cases of primary cancer of the urethra, only one of which remained free from recurrence. In the technique of his operation for this condition he begins by an extensive resection of the tributary inguinal and hypogastric lymph nodes with their surrounding lymph channels on either side; then a wide resection of the tissues around the urethra is made, including therein the crura of the clitoris and the entire urethra. After making an artificial vesicovaginal fistula in the base of the bladder for

drainage purposes, a new urethra is built up as well as possible from the muscular tissue left at the neck of the bladder.

The incontinence of urine resulting from such extensive resection of the urethra, from severe tears at childbirth, or from the destruction following a tertiary syphilitic ulceration, is dealt with in conclusion. Of these three classes, the incontinence resulting from tears gives the best results. Occasionally, where operation is contraindicated, relief can be obtained in these cases by wearing a vaginal pessary that presses against the urethra. Where plastic work is necessary the writer prefers not to open the urethral canal but to build up the tissues around it for support. The cases where an entire new urethra has to be built up in patients of advanced age yield a large percentage of failure or only partial success. Special emphasis is laid upon a high suture of the levator ani muscle wherever there has been incontinence, as the levator ani has a not inconsiderable influence upon the control of urination.

#### MISCELLANEOUS

**Kehrer: Surgery of Sterility** (Chirurgie der Sterilität). *München. med. Wchnschr.*, 1912, I, 2501.

By Surg., Gynec. & Obst.

The important forms of sterility in the male and female, the absence of germinal cells, menorrhœa and azoöpermia, may be rationally treated by the transplantation of sound ovaries or testicles. Ovarian tumors causing retention of germinal cells may be treated by partial oöphorectomy with conservation of sound of the stoma and tubes. If massage has no effect in obstructions to the entrance of the ovum into the infundibulum, tubostomy is the only help that can be instituted.

Occlusion of the os uteri is doubtless an obstacle to fecundation; what degree of narrowness, however, causes sterility cannot be decided. Results may be obtained in stenosis laminaria by sufficiently large incisions. For leucorrhœa with much secretion or a tough cervical mucous plug, the introduction of a uterine cannula (a cone-shaped ebonite tube) is the rational treatment. When the sperm is prevented from entering the os uteri by ejaculatio præcox, stenosis of the vagina, vaginismus, hypo- and epispadias or masculine hermaphroditism, either the coitus specularis or coitus condomatosus should be used. Success with the coitus specularis was effected in one case where the husband was instructed in the use of a tubular speculum, resulting in the birth of two children. In constitutional diseases the practitioner should rather advise anticonceptual remedies than to try to repair the cause of sterility.

E. S. TALBOT, JR.



## OBSTETRICS

### PREGNANCY AND ITS COMPLICATIONS

#### **Green-Armytage: Elephantiasis of the Vulva.**

*J. Obst. & Gynec. Brit. Emp.*, 1912, xxii, 270.

By Surg., Gynec. & Obst.

Green-Armytage reports from Calcutta the case of an 18-year-old primipara, a Bengalese woman, who had been in labor for 14 hours. Each labium was occupied by an enormous, hard, elephantoid, warty growth, and projecting from the region of the clitoris and vestibule was a third mass, bifid and granulomatous. The tumors had so constricted the vaginal introitus that digital examination was well-nigh impossible. The cervix was nearly fully dilated, the membranes were ruptured, and the foetal head was high; temperature 100.4°, pulse 100.

Abdominal Caesarean section was performed, followed by total hysterectomy. On the third day, the central vaginal growth began to appear gangrenous and was amputated. Aside from a colon bacillus cystitis, recovery was uneventful. The child survived. Histologically the tumor showed the typical fibrous stroma, with the large dilated lymph spaces of elephantiasis.

CAREY CULBERTSON.

#### **Green-Armytage: Post-Mortem Caesarean Section.**

*J. Obst. & Gynec. Brit. Emp.*, 1912, xxii, 272.

By Surg., Gynec. & Obst.

The author reports the case of a Bengalese primipara, aged 20, who was admitted at term into the Eden Hospital, Calcutta, in a state of coma. For ten days she had complained of giddiness, back-ache, dysuria, and constipation. She appeared oedematous, and the urine showed albumin and casts. The next morning she was reported dying. On the way to the operating room respirations ceased, and 7½ minutes later the heart could no longer be heard. Abdominal section was performed on the stretcher, and a healthy child removed. The child did well and was alive three months later.

CAREY CULBERTSON.

#### **Edling: Radiographic Diagnosis of Extrauterine Pregnancy.**

*Zentralbl. f. Gynäk.*, 1912, xxxvi, 1559.

By Surg., Gynec. & Obst.

Zurhelle believes that the importance of radiodiagnosis of extrauterine pregnancy has been somewhat exaggerated. It is evident that this method of diagnosis is of value only in those cases where pregnancy is far advanced, since otherwise the fetus would not throw a shadow clear enough for diagnosis.

Zurhelle has determined the precise seat of extra-

uterine pregnancy by inserting a metallic sound into the uterus, and thus demonstrating by means of the negative that the uterus was pushed to one side of the pelvis, and consequently that the foetus must lie to the opposite side. However, in those cases where the precise location of the foetus has not been determined, it is of course impossible to introduce a sound into the uterine cavity except at the risk of provoking an abortion should the pregnancy be normal; and further, if the uterus is found in front of or behind the foetal cyst and the radiograph be taken from the front or from behind, the shadow of the intrauterine sound would coincide with the shadow thrown by the skeleton of the foetus, so that any conclusions drawn from the picture would be misleading.

In conclusion, the author states that radiodiagnosis of extrauterine pregnancy which has reached a stage of development sufficient to throw an X-ray shadow has become very rare, as such cases are diagnosed early by the well-developed symptom-complex which they produce in the mother, and are operated.

E. S. TALBOT, JR.

#### **Davis: Thyroid Disease Complicating Pregnancy and Parturition.**

*Bull. Lying-In Hosp.*, 1912, viii, 176.

By Surg., Gynec. & Obst.

Writing from a purely clinical point of view, Davis first offers a fairly complete review of the literature, and reports four cases from his own experience. In concluding, he summarizes as follows:

"In my experience, in examining all cases of pregnancy the condition of the thyroid gland should receive attention. If this be manifestly enlarged or altered the patient's nitrogenous metabolism should be closely watched, and if evidences of lack of thyroid secretion be found, the active principle of the glands in some available form should be administered. I have seen the best results by small doses, one grain three times a day, continued for from four to seven months.

"Our most reliable methods for ascertaining the patient's condition are nitrogen partition of the urine and the clinical study of the condition of the circulation. Unfortunately, pulse tension varies so greatly, sometimes under the excitement of examination, that it is not as constant and reliable a factor in diagnosis as we have hoped and wished. The nitrogen partition, in our experience, is much more reliable.

"If there is a history of enlargement in the thyroid during labor, with the development of unfavorable mechanism and loss of the child through birth pressure, elective Caesarean section before labor should be selected.



"No case should be considered as convalescent, or receiving adequate attention, in which the patient after recovery from parturition does not seek surgical advice and treatment to permanently remedy the thyroid condition.

"The induction of labor in these cases is seldom indicated, as it is too slow and uncertain. The pressure of elastic bags increases the mother's nervous disturbance, and delivery of the child through a partially dilated birth canal exposes to additional risk.

"In cases where degeneration of the thyroid gland does not seem to be present but an increased secretion of thyroid material is formed, absolute rest and milk diet, sedatives, and the application of ice over the gland should be immediately employed with the hope of improvement until the child can become viable. As reported cases show, it is sometimes possible to check the thyroid activity by this means and to bring the patient to a safe and spontaneous termination of pregnancy.

CAREY CULBERTSON.

**O'Connor: Pyelonephritis of Pregnancy and the Puerperium.** *Boston M. & S. J.*, 1912, clxvii, 652.  
By Surg., Gynec. & Obst.

O'Connor reports a series of 29 cases, and from his study draws the following conclusions:

1. Infection of the pelvis of the kidney invariably involves the parenchyma.
2. Owing to its anatomical relations, the right kidney is more vulnerable.
3. The disease is much more frequent than supposed; the writer estimates that it occurs once in every 3000 cases.
4. Malnutrition, constipation, and tonicity of abdominal muscles (holding the pregnant uterus against ureter), are predisposing factors; tendency to renal abnormalities on the right, dextrotorsion of the uterus and predominance of positions in the right oblique diameter favor the infection of the right kidney.
5. Infection by the colon bacillus is the most common type, direct transmission through the intestinal walls being the probable mode of entrance (the ascending colon overlaps the right kidney and is very close to it).
6. The pathological picture shows the pelvis and ureter dilated with pus, and miliary abscesses in and beneath the cortex.
7. The cardinal symptoms are smarting micturition, chills, fever, nausea and vomiting, pain in the loin, and elevation of pulse. The urine is turbid, purulent, and albuminous.
8. Tenderness in region of kidney is always present. Enlargement of the organ can be demonstrated in about one fifth of the cases.
9. Abortion and surgical kidney are the most common complications.
10. The diagnosis can generally be made on physical signs and urinalysis, the differentiation from appendicitis being the greatest difficulty.

11. Prognosis is usually good for the mother and less favorable for the child.

12. Treatment by rest, sedation, catharsis and urinary antiseptics has met with success. The use of vaccines and pelvic lavage, if of any real value at all, entails dangerous delays and, being extremely technical, is beyond the scope of the rank and file of the profession. Early operation in cases that assume a surgical aspect is to be recommended.

**Tuszkai: Heart Disease in Pregnancy.** *Am. J. Obst.*, N. Y., 1912, lxxi, Nov. By Surg., Gynec. & Obst.

The fact that individual observers hold such different opinions makes it desirable to clear up this question as far as possible. Tuszkai's article is a study of the literature and of 16 cases of his own, in only 8 of which are the notes of a reliable character. Cases of pregnancy complicated by heart disease are divided into three main groups: (1) Those cases in which there has been recognized heart disease for some time before pregnancy occurs; (2) those cases in which a latent heart lesion is made manifest through pregnancy; (3) those cases in which pregnancy causes cardiac trouble of a fundamental nature, and permanent arterial disorders ensue as a result.

The author's conclusions are summarized as follows:

1. The pulse in pregnant women differs from that of a normal individual in that it loses its normal variability, not only in the second half of pregnancy but sometimes at the outset.
2. The cessation of variability is most probably the sign of normal hypertrophy of heart of a gestational character.
3. The prognosis in cases of pregnancy complicated by heart disease, based on the literature of the subject and the author's experience, may be considered as follows: (a) In cases in which heart trouble was present before pregnancy the diagnosis is simple, for we meet with marked heart lesions in the early stages of pregnancy. The prognosis in these cases is usually unfavorable. Variability of the pulse disappears for a very short time, to reappear again in an increased degree combined with symptoms of dilatation of heart and want of compensation. (b) To the second group belong cases in which the heart affection, hitherto latent as a chance factor, is brought into prominence by the pregnancy. Into this category fall also cases of angiosclerosis, or those with hereditary tendency, and also those cases aggravated before labor by some serious disorder of an infectious nature, as influenza, typhus or gonorrhoea, or some general ailment, such as tuberculosis, syphilis, or rheumatism. Diagnosis will present no difficulty if we carefully investigate the causes referred to, and we shall find that the heart trouble develops gradually and attains proportions consistent with the degree of the general disease and the occasional factor present. Prognosis may therefore be quite favorable in some instances in this group.

CAREY CULBERTSON.



**Williamson: A Clinical Lecture on the Significance and Treatment of Sugar in the Urine During Pregnancy.** *Clinical J.*, 1912, xli, 97.

By Surg., Gynec. & Obst.

If sugar is found in the urine of a pregnant woman by Fehling's test, it should be determined whether it is glucose or lactose. Glucose is fermented by yeast; lactose is not. A trace of lactose is common during the latter weeks of pregnancy, and indicates premature mammary activity but has no further clinical significance. After delivery, whenever the breasts become engorged lactose is present in the urine; when the distention of the breasts is relieved the lactose disappears. If glucose is present in the urine, one must determine to which one of the three groups the case belongs — alimentary glycosuria, transient diabetes, or true diabetes. Alimentary glycosuria can be eliminated if a carbohydrate free diet causes urine to become sugar free. Transient diabetes can only be diagnosed positively by the disappearance of the sugar in the urine after delivery. However, if, despite a strict diet, sugar is present in the urine in the early months of pregnancy, if acetous and diacetic acid also are present, if thirst, hunger, and prurites are not relieved by dieting, one can make a probable diagnosis of true diabetes. The transitory diabetes is due to a change in the pituitary body.

True diabetes is a very common cause of miscarriages and of the death of the child during the last few days of pregnancy. Diabetic pregnancies are characterized by hydramnios, presence of glucose in amniotic fluid, and excessive development of the child. Diabetes does not cause sterility. Following delivery, there is a very severe acidosis, due to elimination of waste products by increased muscular effort of uterine and abdominal muscles. This acidosis usually terminates in coma and death.

The prognosis is extremely grave as to both mother and child in true diabetes — 25 per cent of the cases die within 24 hours after delivery; 25 per cent more die within two years.

If despite a rigorous diet, glucose persists at 2 to 3 per cent, acetous and diacetic acid remain in the urine, thirst, hunger, and prurites continue — terminate pregnancy. After delivery give intravenous injections of sodium acetate, 1 dr. to a pint of normal saline, to counteract the acidosis.

**Smith: Icterus Gravis Simulating Phosphorus Poisoning; Report of a Case with Post-Mortem Findings.** *J. Mo. St. M. Ass.*, 1912, ix, 133.

By Surg., Gynec. & Obst.

Mrs. H. M., female, aged 25 years, five months pregnant; ill one week, starting December 8, 1907, with chills, fever, persistent vomiting, and delirium. On entrance into our service at the Mullanphy Hospital, St. Louis, December 16 at 2:30 a m., pulse was 145, temp. 102°, and icterus intense; vomiting of blood once; unconsciousness and death on December 17 at 8:30 p. m. No phosphorescence about mouth, vomit, feces or urine. Physical examination negative, except 0.2 per cent of albumin in urine,

with fat droplets in epithelial cells. No leucin or tyrosin. Post-mortem 17 hours after death showed liver of normal size and weight, viz. 3 lbs. Necrosis of liver parenchyma so extensive, with some fatty degeneration, that acini were hardly distinguishable. Chemical examination of sections from liver and kidney showed no phosphorus by distillation or with ammonium molybdate test.

**Diagnosis.** Phosphorus poisoning suggested (1) because of fulminating symptoms and, (2) because of pregnancy, phosphorus being frequently taken to induce abortion, and especially in Germany, where patient hailed from. According to Witthaus and Beck, out of 294 cases of suicide by phosphorus, 177 were in Germany and 172 were women, among whom many had taken the poison to produce abortion. Acute yellow atrophy, on the other hand, frequently complicates pregnancy and the puerperal state; but in acute yellow atrophy the liver should be reduced in size and weight. In phosphorus poisoning there should be phosphorescence about mouth, vomit, feces or urine, and phosphorus should be present chemically in the tissues of such organs as the liver or kidneys. Diagnosis therefore must be acute parenchymatous degeneration of the liver, the case being not of sufficiently long duration for atrophy to develop. Acute parenchymatous degeneration or necrosis of the liver, therefore, would appear to be a better term for the condition than acute yellow atrophy.

**Lichtenstein: The Expectant Treatment of Eclampsia** (Die abwartende Eklampsiebehandlung). *Arch. f. Gynäk.*, 1912, xcvi, 416.

By Surg., Gynec. & Obst.

Lichtenstein gives the histories of his 45 cases and statistics of 193 cases from the literature of eclampsia treated expectantly. He recommends a combination of venesection and Stroganoff's method as the treatment for eclampsia. This has the advantage that delivery can be treated conservatively and that it is spontaneous in many cases. If possible the venesection is done primarily up to 500 cc. or else after the delivery, without awaiting further attacks. No damage has ever resulted from this treatment. The venesection lessens the blood pressure and partly removes the poison. The number of attacks was reduced per capita to one half and one third of the attacks of cases treated with active therapy. The attacks stopped in 60 per cent of the cases after the treatment: 35.56 per cent of all cases were intercurrent, and the venesection played a considerable part in the improvement of the eclamptic symptoms; 41 to 55 per cent of all cases proved to be uninfluenced by the delivery as far as attacks were concerned. The foetal mortality is less with the proposed treatment. The maternal mortality was 13.45 per cent in the collected cases and 11.11 per cent in his own material. Later statistics compiled by the author, containing 329 cases, show still better results. His clinical experiences speak strongly against the ovogenous and placental theory of eclampsia.

E. S. TALBOT, JR.



**Harrar: The Mammary Glands and Eclampsia; Report of a Case Treated with Oxygen Infiltration of the Breasts.** *Bull. Lying-In Hosp.*, 1912, viii, 219. By Surg., Gynec. & Obst.

The author points out the various attempts that have been made to connect perversions in the secretion of the mammary gland with the origin of eclampsia. Babies not infrequently are taken ill and die shortly after the first full breast feeding from an eclamptic mother. Working along the lines of comparative pathology, veterinarian investigators have suggested the use of oxygen infiltration of the breasts in eclampsia, similar to the successful treatment of parturient paresis in the cow. Foreign enthusiasts have even amputated healthy breasts of eclamptics in the treatment of the condition. The author proposes that the toxins in the milk or colostrum in eclampsia are rather the excretions of the disease than that the secreting breast is the origin of these toxins. It is more probable that the toxins or destroyed tissue poisons are distributed not only in the blood serum and the urine, but also in the breast secretion, and that the oxygen distention of the submammary cellular tissue merely aids by isolating a concentrated portion of the total amount. He then reports a case of eclampsia successfully treated by this procedure. The patient's colostrum was also expressed after delivery and injected into guinea pigs, which, however, when killed later, exhibited no distinctive pathologic lesions.

**Davis: Modern Methods in Cæsarean Section.** *Bull. Lying-In Hosp.*, 1912, viii, 225. By Surg., Gynec. & Obst.

The author describes in detail the technique of his operative procedure, and presents statistics of 134 personal cases. The main points in the operation include a high median incision,  $3\frac{1}{2}$  inches in length, from the umbilicus upwards. The intestines are held back by wet gauze pads, and the sides of the abdomen pressed against the uterus by an assistant. The uterus is opened in the midline. The hand is swept around the interior, loosening up the membranes, after which the latter are perforated and the foetus is extracted by the breech. The wound in the uterus is closed with two layers of stitches. The first row, of No. 2 chromic catgut, is passed through and within one eighth of an inch of the cut edges of the peritoneal covering of the uterus, down through the muscle, and out in reverse order on the opposite side, avoiding the mucosa. After being tied this row of stitches is covered by a continuous suture of No. 1 chromic gut, by means of which the serous coat is turned in and the first layer of stitches is completely covered. The uterus then is unimpeded in its subsequent descent and the adhesions between the same and the abdominal wound are avoided. The abdomen is sutured in three layers and covered with an ordinary laparotomy dressing. Davis believes that by this method a great deal of shock is avoided, and likewise the danger of a subsequent hernia.

Out of his series of 134 cases, 17 mothers died, in which the causes of death were as follows: Septic infection (only two of these were wholly under the care of the operator; eight had outside examinations or attempts at delivery), 10 cases; acute dilatation of the stomach, anaesthesia, 1; shock and slow, persistent hæmorrhage (third Cæsarean), 1; pneumonia, 1; eclampsia, 4. The indications for the operation were as follows: Contracted pelvis in 100 cases; tonic contraction of the uterus and dry labor, 4; prolapsed cord and undilated cervix, 2; after ventral suspension, 4; placenta prævia, 3; pneumonia (patient moribund), 1; accidental hæmorrhage (mother survived; child still-born), 1; new growths, 6. The repeated Cæsarean was done in the same patient in 21 instances.

**Schaefer: Abdominal Cæsarean Section** (Ueber abdominale Kaiserschnitte). *Ztschr. f. Geburtsh. u. Gynäk.*, 1912, Lxii, 253. By Surg., Gynec. & Obst.

The author advocates a special method of abdominal Cæsarean section in which the disadvantages of the classical Cæsarean section are avoided, such as the flowing of blood and liquor amnii into the abdominal cavity, post-operative hernia, pressure on the intestines, cooling of the uterus, trouble in suturing the uterine wound, and great loss of blood. The method is easier than the extraperitoneal section; the wounds are smooth and the incisions simple. The procedure is as follows: A longitudinal incision is made in the median line just above the symphysis, through the skin, fat, fascia, and peritoneum. The cervix is incised longitudinally in the median line just above the fold which is low under the symphysis when the bladder is empty. If the median line is strictly adhered to there is little hæmorrhage. A narrow speculum is placed in the upper angle of the uterine wound and pulled into the upper angle of the abdominal wound, so that both lie close together, thus avoiding the spilling of amniotic fluid and blood into the abdominal cavity. In head presentations the child is extracted with straight forceps; otherwise it is turned and delivered by the feet. One to two cc. secacornin (Roche) are then injected intramuscularly. After some minutes the placenta and membranes are delivered. The cervical wall and peritoneum are closed with continuous catgut sutures. The abdominal wound is closed with four continuous catgut sutures and the skin with Michel's clamps. No cases were drained. All the children were living and dismissed well except one, which had an exophthalmic goitre and died one hour after delivery. Two mothers died. One had a flat pelvis and was operated on 24 hours after rupture of the amniotic sac. She had been examined by nine students and a relaparotomy had to be done on the seventh day after operation for general peritoneal infection, from which she died two days later. The second case was admitted with profuse vaginal hæmorrhage, probably caused by repeated unsuccessful manipulations with forceps. She died 27 days after the operation,



from an abscess in the cul-de-sac of Douglas and a diffuse purulent peritonitis. There was some delay in the healing of the wounds in most of the cases which had been operated on later than 20 hours after the rupture of the amniotic sac.

**Serebrenikowa: A Case of Ovarian Pregnancy** (Ein Fall von Eierstockschwangerschaft). *Arch. f. Gynäk.*, 1912, xcvi, 525. By Surg., Gynec. & Obst.

The author describes the microscopical findings in a case of right ovarian pregnancy, and comes to the conclusion that the fecundation of the ovum did take place in the cavity of the corpus luteum, but that it was retained in the curved and slanting tear of the follicle. It was not fecundated in the folds of the follicle, because the spermatozoa could not have penetrated there. If the ovum was retained in the aperture of the follicle, the spermatozoa could easily enter. This is facilitated by the intraperitoneal pressure, as the follicle has lost the power of driving them out. After fecundation, the ovum developed in the cavity in the lower part of which the usual metamorphosis continued. The corpus luteum was separated from the ovum by a connective tissue plate. This plate was found at the bottom of the foetal sac. The ovum then grew in this connective tissue wall, under and into the tunica albuginea, and, corresponding to its increase in size, farther into the ovarian tissue and follicle. In its further development the ovum destroyed and resorbed the surrounding tissue through the syncytium, causing hyperæmia and greater growth of the struma. Around the amniotic sac the same process took place; here the destruction thinned out the wall of the matrix, which ruptured, and the blood, spurting out from the dilated ovarian vessels under high pressure, destroyed the fine villous spaces. This rupture occurred at a time when the connections between the ovum and the struma were still very loose, and this explains why only a small quantity of the foetal elements was found.

Of 39 cases of ovarian pregnancy found in literature, 4 children were at term and viable — 10 per cent. The cases of ovarian pregnancy may be divided into three classes: (1) The ovum develops in the Graafian follicle, as in the author's case, or in the corpus luteum; (2) the ovum develops on the wall of the ovary; (3) the ovum penetrates into the struma of the ovary and develops there.

**Williams: Further Contributions to Our Knowledge of the Pernicious Vomiting of Pregnancy.** *J. Obst. & Gynec. Brit. Emp.*, 1912, xxii, 245. By Surg., Gynec. & Obst.

This article is the author's first contribution to the subject since 1906, and is based upon his observations since that time. A large part of it is a discussion of the ammonia coefficient and its relation to pernicious vomiting. He still holds to his original classification of reflex, neurotic, and toxæmic vomiting, the neurotic form being the most common, while the frequency and importance of the reflex

type has been greatly exaggerated. The value of the paper is increased by charts and by the report in detail of 8 cases. The conclusions are:

1. The underlying factor in all cases of vomiting of pregnancy is probably an imperfect reaction on the part of the mother to the growing ovum.
2. In most cases this is only a predisposing cause, while a reflex or neurotic influence is the exciting factor, and cure usually follows its removal.
3. The author holds to the classification of reflex, neurotic, and toxæmic vomiting. Of these the neurotic is the most frequent and the reflex the least frequent type, while the toxæmic is the most serious.
4. Pronounced toxæmic vomiting is accompanied by characteristic lesions and profound changes in metabolism.
5. The significance of a high ammonia coefficient is not specific. It may be a manifestation of toxæmic vomiting, of starvation following neurotic vomiting, or of an acidosis due to various causes.
6. It should be regarded merely as a danger signal, while the differentiation between the various types is possible only after careful clinical observation. If improvement does not promptly follow appropriate treatment, the existence of toxæmic vomiting should be assumed and abortion promptly induced.
7. In the absence of genital lesions a low ammonia coefficient indicates neurotic vomiting, which can be cured by suggestion and dietetic treatment, no matter how ill the patient may appear.
8. In primiparous women vaginal hysterotomy is the most conservative method of emptying the uterus. Nitrous oxide gas or ether should be used in preference to chloroform for anaesthesia.

CAREY CULBERTSON.

**McPherson: The Radical Treatment of Abortion Based on a Series of 3500 Cases.** *Bull. Lying-In Hosp.*, 1912, viii, 234. By Surg., Gynec. & Obst.

The author presents a study of this large number of cases which occurred in the service of the New York Lying-In Hospital, from which it appears that abortions are more common than is ordinarily realized and that the sequelæ are frequently serious. McPherson finds that these cases can be divided into two classes, the first of which included 1781 so-called "neighborhood cases," mainly made up of women treated in their own homes and subject to the ordinary accidents of pregnancy; the second, or "hospital group," including many cases of criminal abortion and almost all of the accident and emergency cases. The number of primiparæ in the latter group was 25 per cent, leaving a rather low percentage of 8.9 primiparæ in the total number, or 16.5 per cent, approximately one primipara to every six aborting women. In this series there were 1320 cases between the sixth and twelfth week, 1220 in the first three months following this, and 800 in the first six weeks of pregnancy. In the entire series of cases the ovum was completely expelled in only 587 and unruptured in 480, showing that in a very large



proportion the process must be incomplete. For this reason the writer advises a radical emptying of the uterus in every incomplete abortion, and this method was employed in 2803 cases out of the series. The mortality was 38, or 1.8 per cent, including all the cases, and, exclusive of accident and malignant complications, only .016 per cent. Moreover, a satisfactory result was obtained in 97 per cent of the cases treated by this means. It seems necessary that in every inevitable or incomplete abortion the uterine cavity be explored and subjected to curettage, with careful antiseptic precautions and under complete anaesthesia, preceded when necessary by a gauze pack in the cervix and uterine cavity to stop hæmorrhage, separate the secundines, and dilate the cervix. After cleaning out the uterine cavity with a sponge holder and the careful application of a dull curette, followed by a sharp one, the interior is wiped out with gauze and packed with a continuous strip of iodoform gauze. In the presence of evident sepsis the sharp curette is omitted and the interior swabbed with tincture of iodine.

#### LABOR AND ITS COMPLICATIONS

**Edward: Dystocia in a Case of Uterus Didelphys.**

*Am. J. Obst., N. Y., 1912, lxvi, Nov.*

By Surg., Gynec. & Obst.

A study of the literature on uterus didelphys shows how infrequently at parturition the second uterus causes dystocia necessitating operation. In most cases the non-pregnant uterus has offered no resistance, either rising out of the pelvis spontaneously or being pushed up manually during delivery. In Lauffer's case there was considerable obstruction, which was overcome gradually in the course of a slow breech extraction. Pollak's case was similar, and in Stahler's there was injury to the vagina, which was septate. Von Guérard reported a case where version was unsuccessful and the foetus was delivered by craniotomy. In two cases described by Bettman and Lählein delivery was by the vaginal route, but both mothers were lost as a result of rupture of the uterus. Abdominal section has been employed but twice, one of these cases not being a true uterus didelphys.

The author's case is that of an American woman aged 20, mentally under-developed. Menstruation had been normal since 14 years of age. She was seen in December, 1911, in labor, the termination of her first pregnancy. The child lay obliquely, the head in the right iliac fossa. Internally the external os was on the left, dilated 1 cm., the cervical canal being obliterated. In the right pelvic cavity lay a tumor, movable, but with an opening leading into it from the vagina, just beside the dilated os. It gave the impression of a second uterus. Reposition of the child was impossible, and Cæsarean section was performed after waiting a few hours. This revealed a genuine uterus didelphys. The pregnant uterus was removed by the Porro procedure, the second uterus being left. Recovery was uneventful, the child also surviving.

CAREY CULBERTSON.

**Kreutzmann: Labor in Moderately Contracted Pelves, with Special Reference to Cæsarean Section.** *Cal. St. J. M., 1912, x, Nov.*

By Surg., Gynec. & Obst.

The author recommends, in this class of cases, watchful expectancy. To the experienced and conscientious accoucheur it will become evident, after 10 to 12 hours from onset of labor, whether the woman is able to force the head through the pelvis or not. If it is apparent that the head will not pass, perform Cæsarean section; but if the labor has been protracted, possibly attempts at delivery having been made, the author strongly advises against Cæsarean section. In this class of cases Cæsarean section is done for the sake of the child; the life of the parturient must not be exposed to any danger whatsoever. There is a mortality in these cases after Cæsarean section. Reports of a number of successful cases, as occasionally made, do not tell the whole story; the fatal cases are not reported.

When symptoms of infection are present, delivery per vias naturales should be done — forceps applied and craniotomy done; in extreme cases the author even thinks craniotomy of the living child is permissible, and certainly it is better obstetrics than brutal application of the forceps, followed by crushing the life out of the foetus, and by severe, possibly fatal laceration of the mother; better obstetrics than Cæsarean section with death of the mother and possible death of the baby in a few days. The author has declined pubiotomy in his clientele, from fear of damage suits in case of failure.

#### PUERPERIUM AND ITS COMPLICATIONS

**Bumm: Three Cases of Puerperal Pyæmia, with Operative Treatment.** *Königliche Universitäts Frauenklinik, Berlin.* Reported by Dr. Warnekros,

assistant; adapted by L. Robin-Goldsmith.

By Surg., Gynec. & Obst.

**CASE 1.** Patient robust, 40 years old, XII-para, admitted to hospital after having been examined by midwife and by physician. Findings: temperature 37.5°, pulse 100; os dilated 2 fingers' breadth; membranes ruptured (8 days previously). No heart tones. Dead foetus delivered spontaneously one half hour later. Placenta expressed in 30 minutes. Temperature 39.8°. After 24 hours, temperature 39°. No bacteria in blood. Streptococci and putrefactive bacteria in lochia. Fourth day, temperature 38°, pulse 100; slight chill. Chills and fever continued up to the tenth day. A rectal and vaginal examination showed infiltration and thickening to right of uterus. Laparotomy performed and common iliac vein ligated. Branches of the common iliac vein were thrombosed and adherent to the surrounding tissues. Temperature fell from 41° to 37.9°. No bacteria found in blood. On third day post-operative, patient died of aspiration pneumonia. Autopsy showed a double-sided broncho-pneumonia. Uterus and adnexa negative. Cultures from peritoneum sterile. On right side there was perivascular infiltration and the veins were filled with pus thrombi.



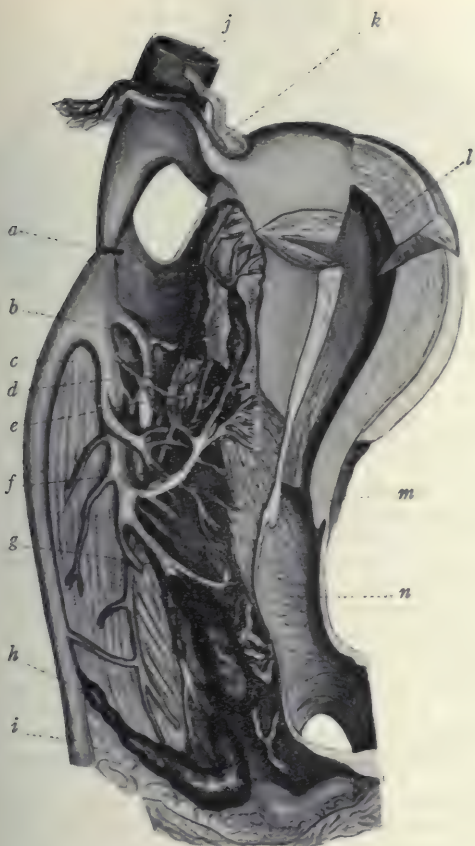


Fig. 1. The ligation of the common iliac vein had excluded from the circulation several purulent foci. *a*, ligation on the right common iliac vein; *b*, anastomosis from abscess to internal iliac vein; *c*, internal iliac vein; *d*, median iliac vein; *e*, abscess in parametrium; *f*, superior uterine vein; *g*, inferior uterine vein; *h*, anastomosis of the vaginal vein with the external iliac vein; *i*, external iliac vein; *j*, inferior vena cava; *k*, single common iliac vein; *l*, uterine cavity; *m*, cervix; *n*, vagina.

An abscess the size of a plum was found in the right parametrium and in the musculature of the cervix.

CASE 2. Primipara, 19 years old; examined by midwife; brought to clinic for delivery on account of heart trouble. Findings: pulse 110, irregular; loud systolic murmur over apex; no signs of failing compensation. Vaginal examination showed 3 fingers' dilatation; head fast in pelvis; pains regular and strong. In the morning, forceps delivery of living child. Placenta delivered spontaneously. Lacerated perineum repaired. Amniotic fluid had foul odor. After delivery, temperature 37.2°; rose gradually to 40.6° on third day. Colonies of bacilli and streptococci found in cultures from blood and

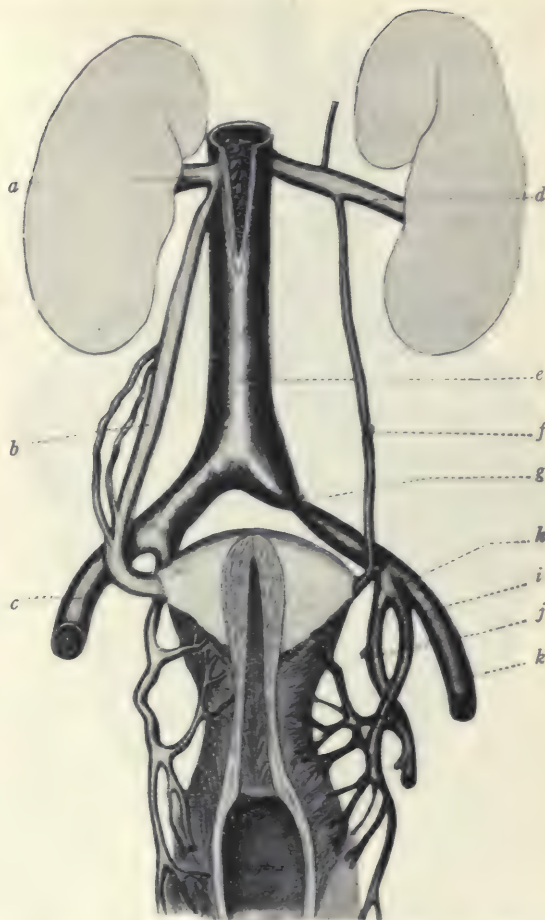


Fig. 2. The ligation of the left common iliac stopped the chills. *a*, right renal vein; *b*, right spermatic vein; *c*, external iliac vein; *d*, single renal vein; *e*, inferior vena cava; *f*, ligature of single spermatic vein; *g*, ligature of single common iliac vein; *h*, stem of hypogastric vein; *i*, median iliac vein; *j*, interior iliac vein; *k*, external iliac vein.

lochia. Patient had ulcers in larynx and trachea. On ninth day was given 10 cc. of Menzer's streptococci serum subcutaneously, and 24 hours later 20 cc. of Arenson's serum was injected. A few bacilli and no streptococci were found in blood culture taken one hour later. Three more injections were given in three successive days. Blood remained free of streptococcus, but temperature was not affected, remaining high until 28th day when the common iliac vein was ligated. Temperature gradually fell until the fourth day post-operative, when it was normal. For the next six days temperature remained normal and there were no chills. Blood culture showed a bacillus. The patient was emaciated and in poor physical condition and was given glucosa and salt solution subcutaneously and nutrition enema



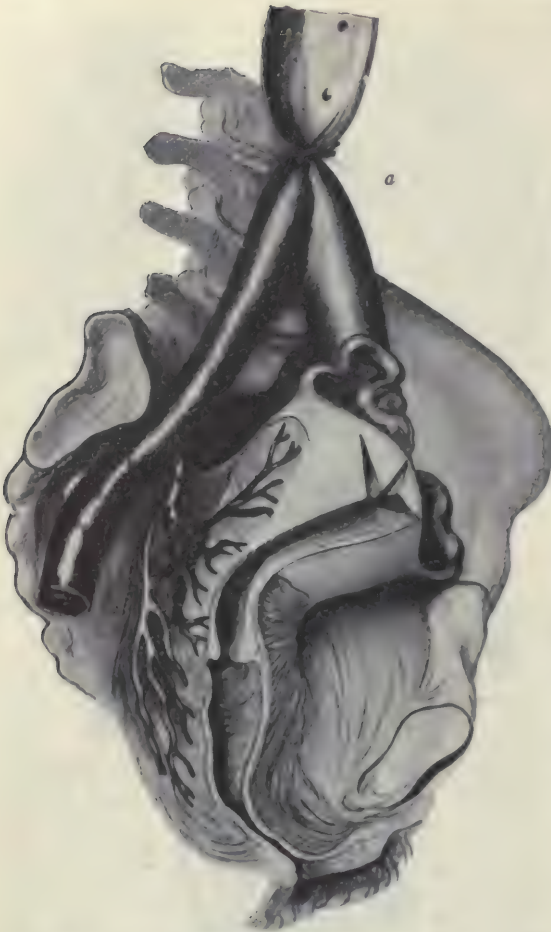


Fig. 3. Section through the closed vena cava. a, ligation of vena cava.

per rectum. However a severe decubitus developed. On the eleventh day post-operative, while the patient was being turned on her side, she complained of a severe pain in the abdomen. She died in 12 hours.

Autopsy showed pus in the pelvis, coming from a ruptured parametric abscess extending retroperitoneally to the spleen. The entire lumen of the vena cava was filled with a purulent thrombus extending up beyond the entrance of the renal veins and down to the femoral vein. The left pleural cavity contained pus and adhesions. The abscess showed a pure culture of streptococcus. The thrombus showed a pure culture of bacilli.

CASE 3. Primipara, anæmic, aged 36. Admitted with diagnosis of placenta prævia following an examination by a midwife. Temperature normal, pulse small, and frequent. Vagina filled with blood clot, cervix dilated one finger's breadth. The cervix was dilated digitally and podalic version performed; one foot was pulled down. As there was no progress

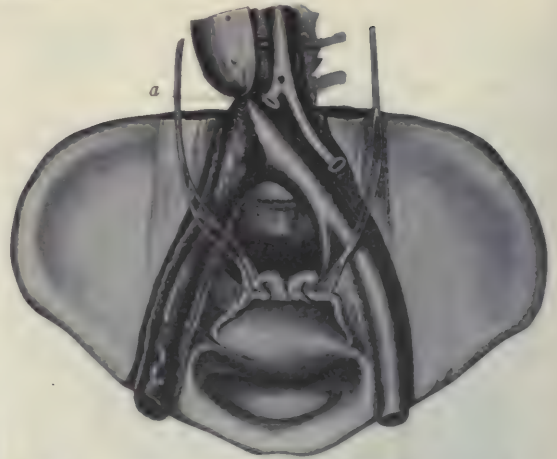


Fig. 4. Ligation of vena cava above the point of division. a, ligation of the inferior vena cava.

in the next 20 hours, despite traction on leg and subcutaneous injections of pituitary extract, cervix was dilated, second foot brought down, and delivery effected by means of perforation of after-coming head. Lacerated cervix repaired. Placenta delivered spontaneously in 15 minutes. Fragments of placenta removed digitally, uterus massaged bimanually, cold intrauterine douches given, and uterus and vagina tamponed. Tampon removed in 24 hours. Temperature: first day, 37°; second day, 38.7°; third day, 39.9°. Pulse slow, regular, strong. On fourth and fifth days temperature and pulse normal. Temperature then gradually rose till eighth day, when it was 39°. Pulse 110. Streptococci were found in blood. On eleventh day there was a severe chill and temperature 39.9°. Streptococcic serum injected on 12th, 13th, and 14th days. Blood cultures showed a few streptococci. From the 16th to the 26th days the temperature was that of a thrombophlebitis; pulse varied from 120 to 130, but there were no chills. On 18th day thrombophlebitis of right femoral vein was diagnosed. From the 26th to the 30th day serum again injected without effect. On 31st day inferior vena cava was ligated, for the right common iliac vein was thrombosed. The patient died 4 hours after operation. Autopsy showed a right-sided adhesive pleuritis, septic spleen, fatty liver; the inferior vena showed no thrombosis above ligature, but a marked thrombosis below ligature, extending to femoral and crural veins. The left common iliac vein was filled with liquid blood.

**Conclusions.**—The best time to operate is when, according to clinical and bacteriological findings, the process is localized. The operation should be performed at the time when the infecting organisms are being eliminated from the blood. The common iliac vein is the choice of the site of operation, but the inferior vena cava can be ligated without fear, for a compensatory circulation will form.

E. S. TALBOT, JR.



## MISCELLANEOUS

**Frank: An Experimental Study of the Placenta under Physiological Conditions (Ferments: Vital Staining).** *Surg., Gynec. & Obst.*, 1912, xv, 558.  
By Surg., Gynec. & Obst.

The author gives a résumé of the work done on the placenta relative to the ferments present and also the permeability of the placenta to different substances. The ferments found in the embryo are also tabulated, showing variable results obtained by different workers. The author states that the gap between mother and foetus is bridged by the placenta. The foodstuffs carried to the placenta are contained in the blood. Certain substances are accepted, others rejected. The excretory products elaborated by the embryo also reach the maternal blood through the placenta. The presence of ferments, though suggestive, does not necessarily imply that these ferments perform the work; they may be present merely as an integral part of the placental cell, and the placenta may act purely as a delicately adjusted filter (using the term broadly, to include osmosis, diffusion, and even selective secretion).

The object of the investigation is to determine whether any differences exist in the ferment content of the functioning as compared with the non-functioning placenta. The author then gives the technique and the results of his experiments, showing with good color illustrations the "vital" staining. He draws the following conclusions:

1. The placenta does not show any parallelism between the ferment values and its functional condition.
2. Changes in the minute structure of the placenta, as shown by vital staining, are dependent upon the nutrient supply of blood furnished by the mother.
3. The foetal membranes possess a considerable degree of independence, and maintain their function unchanged much longer than the placenta.
4. The foetal membranes are more rapidly traversed by certain substances than is the placenta. Whether exchange effected by this route is of importance to the foetal metabolism was not determined.
5. The evidence obtained in this investigation

favors the view that the placenta is a passive organ for exchange, rather than an active organ of metabolism.  
E. L. CORNELL.

**Markoe and Wing: The Thyroid and Its Relation to Pregnancy and the Puerperal State.** *Bull. Lying-In Hosp.*, 1912, viii, 152.  
By Surg., Gynec. & Obst.

The authors report in detail their observations upon a series of 1000 pregnant women, which were entered upon a special form of analytical chart. Freund and Lange, in a recent communication, stated that they were unable to formulate any definite rules for measuring the thyroid gland, owing to the impossibility of devising a method that would be accurate. Markoe and Wing agree that a careful study of their cases, where the thyroid was palpable, shows that the results were no more satisfactory. It was found, moreover, that in most of the women examined no definite means of judging the time when their necks first began to enlarge could be elicited. In a study of the blood examinations made in most of the cases there was a small percentage of abnormalities, but these could be accounted for by pathological conditions in no way connected with the thyroid. Most careful analyses of the urine were made in all cases, with negative results, likewise no definite deductions could be made out in regard to the thyroid in its relation to toxæmia. Among the 1000 cases examined, 550 were primiparæ and 450 multiparæ. Ninety-seven cases of enlarged thyroids were found, in 64 primiparæ and 33 multiparæ. A family history of goitre was present in 8 cases (7 primiparæ and 1 multipara). In 6 primiparæ there was a history of menstrual disturbance. Hyperthyroidism was present in varying degrees in 7 cases, and probably in one other, although there was no palpable thyroid evident. In an endeavor to find out at what time the enlargement of the thyroid was first noticed among 97 cases, it was seen before pregnancy in 12 and during pregnancy in 18, 34 remaining doubtful, as the patients had not observed any changes in their necks, although when observed at term the gland was found enlarged. In multiparæ, the enlargement was determined before pregnancy in 8 cases, during pregnancy in 12, and doubtful in 13; the same remarks applied to the latter as in the cases of the primiparæ.



## GENITO-URINARY SURGERY

### KIDNEY AND URETER

**Hartmann: Technique and Results of Operations upon the Kidney** (*Technique et résultats des opérations pratiquées sur le rein*). *Reports of Hartmann's Clinics*, 1912, 4th series.

**Hartmann: Surgical Treatment of Diseases of the Kidneys** (*Traitement chirurgical des maladies des reins*). *Id.*, p. 328. By *Journal de Chirurgie*.

These two articles are a résumé of the author's practice and constitute a veritable treatise upon renal surgery. In the first article the author describes the technique and the results obtained for each operation; in the second he gives the indications for operation in each disease of the kidney and explains the statistics derived from his own experience. Both articles are remarkable for their richness in material and for the number of personal observations published in extenso.

Hartmann conforms to the classical procedures in dealing with renal disease. He is always careful to test the functional activity of both kidneys by means of methylene blue, etc., before operating. He does not employ ureteral catheterism. He is opposed to artificial polyuria.

He has practiced 16 exploratory nephrectomies, with 10 cures; 6 decapsulations, with 3 deaths (one from anuria) and 3 cures; 17 nephrolithotomies, with one death and 16 cures (two had temporary fistulae); 6 pyelotomies, with 6 cures; 78 nephrostomies (77 lumbar, 1 abdominal), with 14 deaths and 64 operative cures; 124 nephrectomies by the lumbar route, with 3 deaths and 121 cures (in one case the vena cava was torn; it was doubly ligated); 8 abdominal nephrectomies, with 1 death and 7 cures; 35 nephropexies (32 in the female, 31 being right-sided)—in 15 cases there was renal retention, there was 1 death and 34 cures. The end results of fixation of the kidney vary because of the subjective trouble which may arise. Hartmann reports 11 favorable results in 17 cases.

The author treated 15 cases of anuria and 3 cases of anuria from nephritis, and all died despite decapsulation. One case of bilateral tuberculosis was cured by nephrotomy; 10 cases by calculous anuria, 2 of which were cured spontaneously; 8 were nephrotomized, and there were 5 deaths. For lithiasis (suppurative) Hartmann performed 12 nephrotomies, with 1 death and 7 complete cures; for aseptic lithiasis, 6 pyelotomies with 6 cures without fistula; 15 nephrotomies, with 1 death and 14 cures; 2 patients had a recurrence of the trouble. In 13 cases of movable kidney he did a nephropexy with 1 death and 12 permanent cures.

In 18 cases of malignant renal tumors which he removed, there were 11 hyponephromata, 3 renal

carcinomata, 2 epitheliomata of the pelvis and one fibrosarcoma of the hilum. The operative mortality was 11 per cent. In cases of malignant neoplasms, Hartmann advises the removal with the kidney of the perineal fat. He does not molest the suprarenal capsules. He is a partisan of early nephrectomy in unilateral renal tuberculosis. He has not any faith in the efficacy of medical treatment.

CH. LENORMANT.

**Braasch: The Clinical Diagnosis of Congenital Anomaly in the Kidney and Ureter.** *Ann. Surg.*, Phila., 1912, v, 726.

By Surg., Gynec. & Obst.

Within the past five years, 36 patients having gross renal and ureteral anomalies were observed in the Mayo clinic. Of this number, 7 were operated on for diseased conditions in the abdomen other than those in the kidney, in whom the discovery of the renal anomaly was largely incidental to general abdominal exploration. Eighteen were operated on for various pathologic conditions complicating the anomaly. With the development of the cystoscope and the radiograph, and, more recently, through the discovery of the value of these instruments in their simultaneous employment, as in pyelography, an accurate diagnosis can be made in practically every case of renal or ureteral anomaly.

In the order of their frequency the various anomalies were as follows: fused or horseshoe kidney, 11; congenital, single, or asymmetrical kidney, 6; atrophic kidney, 5; ectopic kidney, 3; duplication of renal pelvis and ureter, 8; division of ureter, 3.

The pathologic condition existing in the anomalous kidney or ureter usually calls attention, clinically, to its existence. That such kidneys are peculiarly liable to disease has been noted by various observers.

**Fused kidney.** The type of fused kidney most frequently found is the so-called horseshoe kidney. Although its usual position is in the median abdomen at about the level of the umbilicus, it often lies more to either side of the spine. Unfortunately, the subjective symptoms caused by various pathologic conditions found in the horseshoe kidney might easily be confused with the symptoms caused by disease in the surrounding organs. The radiographic shadow of soft tissues in the abdomen is usually too inexact to permit of accurate interpretation. Occasionally the outline of a median mass in a thin subject may be suggestive of a horseshoe kidney. However, more exact data are to be obtained through the combined use of the radiograph and the cystoscope; namely, through pyelography. The relative position of the pelvis is accurately determined, and any complicating dilatation or deformity



of either pelvis and ureter can be clearly demonstrated.

**Congenital single kidney.** The diagnosis of the congenital absence of one kidney can be made clinically only by means of the cystoscope, and thus the condition becomes a problem largely of cystoscopic technique. Inability to find a ureteral meatus in a markedly inflamed and contracted bladder does not necessarily indicate its congenital absence. In the hands of an experienced observer, however, the absence of any evidence of a meatus in the bladder which permits of thorough cystoscopic examination would be strong evidence of a single kidney.

**Atrophic kidney.** Atrophy of the kidney may be either congenital or acquired, and it may be quite impossible to differentiate the etiologic factors on gross examination. With a marked degree of atrophy of one kidney, the other kidney is usually found hypertrophied. The discovery of hypertrophy in a kidney upon abdominal exploration would necessitate examination of the other side. The clinical diagnosis of an atrophic kidney may be exceedingly difficult. It can be made from a quantitative estimate of renal function, cystoscopic evidence of ureteral atrophy, systemic evidence of renal insufficiency, and finally pyelography.

**Ectopic kidney.** When the kidney is found lying fixed in the bony pelvis or across the spine, and when its blood-vessels come from adjoining vessels, such as the iliacs, it must be regarded as a true congenital anomaly. Such a kidney is called an ectopic or pelvic kidney. Pyelography is more accurate in its diagnosis than ureteral catheters, since it will not only locate the kidney but will also demonstrate any pathologic complication.

**Anomalies of the ureter.** That the normal renal pelvis may assume any of a great variety of shapes is well known. The individual calices may be so large and so situated that they resemble separate pelves, particularly so when the calices do not unite well beyond the hilum. When, however, there are two distinct pelves within the hilum, and each has its separate calices and ureter, the condition must be considered as an anomalous duplication of the pelvis and becomes of practical importance.

**Division or partial duplication of the ureter.** The ureter may divide at any part of its course. The most frequent point of division is at the first portion of the ureter, where two more branches of the ureter leave the hilum and unite at a short distance. The diagnosis of pelvic duplication can best be made by means of the pyelograph. It is of surgical importance when resection is indicated.

**Ipsen: Researches on the Tumors of Grawitz.**

*Beitr. z. path. Anat. u. z. allg. Path.*, 1912, liv, 233.

By Surg., Gynec. & Obst.

It is generally admitted at the present time that the majority of tumors of the kidney which are characterized histologically by the presence of large vacuolated cells of polygonal contour have

their origin in the embryonic debris of suprarenal tissue which has been embedded in the body of the kidneys.

Ipsen claims that this theory, while generally accepted since the work of Grawitz (1885), nevertheless calls forth serious objections. The majority of tumors which unquestionably develop from the primary or accessory suprarenal capsules, but which are extrarenal, have a structure totally different from the tumors of Grawitz; notably, they never present the papillary formations which are generally found in the tumors of Grawitz. Moreover, these tumors have their seat of predilection in the region of the inferior pole of the kidney, while the intrarenal capsules by preference occupy the superior pole of that organ. Ipsen finds, on the other hand, many points of similarity between the tumors of Grawitz and certain adenomatous tumors the renal origin of which is universally accepted. He thinks that the cellular peculiarities of certain portions of the tumors of Grawitz are due to phenomena of degeneration.

In conclusion, the so-called hypernephromata appear to develop at the expense of the renal parenchyma, as claimed by Sabourin, Sudeck, and Zehbe.

E. S. TALBOT, JR.

**Stüsser: Primary Epithelial Tumors of the Renal Pelvis.** *Beitr. z. klin. Chir.*, 1912, lxxx, 595.

By Surg., Gynec. & Obst.

The author reports a case of primary epithelial tumor of the pelvis of the kidney, and sums up his article with a fairly exhaustive tabulation of all similar cases that he has been able to collect from the literature. The case reported is that of a woman 66 years of age who for some weeks had been conscious of the pressure of a tumor mass in her left flank. There was no associated pyuria or hæmaturia. This tumefaction, occupying the left flank, disappeared above, beneath the costal arch, and extended downward to the rim of the pelvis; it was absolutely dull to percussion and was fluctuant. It simulated an ovarian cyst which was attached to a long pedicle.

Operation revealed a left hydronephrotic kidney, and a transperitoneal nephrectomy was performed. The patient recovered from the immediate effects of the operation, but a secondary involvement soon occurred, and death followed at the end of four months.

Examination of the extirpated kidney showed that the renal pelvis had been enormously distended, and thickened and hard infiltrated areas, which were raised above the surface and projected into the cavity, appeared throughout its wall. Microscopic examination of these hard papillary projections showed them to be composed of pavement epithelial cells malignant in character. The renal parenchyma was very much flattened and showed areas of degeneration. It is probable that some chronic kidney irritation preceded this epithelomatous transformation.

E. S. TALBOT, JR.



**Bazy and Bazy: Should We Suture Incisions of the Renal Pelvis and of the Ureter?** (Faut-il suturer les incisions du bassin et de l'uretère?). *J. d'Urol.*, 1912, ii, 645. By *Journal de Chirurgie*.

The authors insist upon the advantages and the indications of pyelotomy. Pyelotomy is the operation of election; nephrotomy, on the contrary, is the operation of necessity. Pyelotomy is indicated, not only in small calculi of the pelvis, but in large and ramified calculi which, if removed by nephrotomy, cause much tearing of the renal substance. Nephrotomy will be reserved for calculi in the calices near the cortex of the kidney.

Concerning suture of the ureter or of the pelvis, in 16 operations the authors performed it 11 times; 5 times, for divers reasons, they could not do it. In the 11 sutured cases, 9 patients made an extremely rapid and uneventful recovery. In the 5 non-sutured cases, the patients recovered with a few simple accidents—discharge for a time of urine through the operative wound, abscess in the abdominal wall, etc.

Therefore they conclude that in all cases where it is practicable suture gives superior results, and it should be practiced whenever it appears possible. In order to avoid infection of the wound in infected cases, drainage of the ureter is preferable to suture. Furthermore, it permits lavage and disinfection of the pelvis. It seems that wounds of the ureter show less tendency to spontaneous healing than wounds of the renal pelvis, and that the indications to suture them are more imperative. One must avoid denuding the urinary conduits; it is a frequent cause of non-healing in ureteral and pyelitic wounds. The suture of the ureter is effected by three or four non-perforating catgut stitches, which suffice to approximate the edges of the wound. This may be reinforced by suture of the surrounding connective tissue layers. However, suture is not absolutely essential. One should not perform it when it appears too difficult, when it has no chance of giving a satisfactory result, when it is dangerous to the ultimate integrity of the caliber of the urinary channels, or when it is necessary to abridge the duration of the operation. J. TANTON.

**Schwytzer: Conservative Surgery in Purulent Infections of the Kidney.** *St. Paul M. J.*, 1912, xiv, 549. By *Surg., Gynec. & Obst.*

The pyogenic non-specific infections of the kidney are: (1) pyelitis; (2) primary pyonephrosis; (3) infected hydronephrosis; (4) hæmatogenous abscesses of the kidney substance.

Of each case examples are given of individual interest. Pyelitis may be treated by nitrate of silver irrigation of the kidney pelvis or removal of a calculus (cases mentioned).

As an example of a primary pyonephrosis a case is cited where apparently a ureter had been caught by a ligature at a former hysterectomy. The kidney was drained; 18 days later a stone and a stricture

of the ureter were removed, with smooth recovery and preservation of the large kidney.

As an example of an infected hydronephrosis a case is cited with 36 quarts of pus in the left kidney, through the sac of which every abdominal organ could be palpated, including the kidney of the other side. Kidney not removed. Permanent recovery without fistula.

As representative of the multiple hæmatogenous abscesses of the kidney substance (surgical kidney) a case is reported with severe multiple infection of the upper third of one kidney with temperatures for four weeks of 103° and 104° daily. The remaining two thirds of the kidney were normal. Resection of the septic upper third of the kidney was followed by prompt and smooth recovery.

**Elsner: Renal Hæmaturia.** *Am. J. Urol.*, 1912, viii, 567. By *Surg., Gynec. & Obst.*

Elsner calls attention to the newer methods which make the localization of lesions in the genito-urinary tract possible, though they still fail in many cases to make positive the true pathologic conditions.

The article is founded on the carefully reviewed histories of 4832 consecutively examined cases of internal disease. The unexpected frequency of nephritis as a cause of blood in the urine is demonstrated. The cases included 229 of chronic interstitial nephritis, of which 33 per cent showed blood in the urine; 14 cases of acute tubal nephritis, all of which had bloody urines; 77 cases of chronic interstitial nephritis, of which 14 per cent showed bloody urine; 8 cases of secondary congested kidney, in all of which urines were bloody. There were 7 cases of tuberculous nephritis. Of the 328 cases of nephritis there were only 12 in which hæmaturia was profuse or alarming. The author dilates on the frequency of nephritis as a cause for hæmaturia to which but scant attention has been given in the past. The clinical material is considered under the following divisions:

1. In chronic tubal nephritis one kidney may bleed, though both organs may be equally invaded or the two organs may alternate in supplying blood to the urine. The majority of renal hæmorrhages due to tubal nephritis are painless and may continue for weeks. Latency of nephritis during long periods following hæmaturia may mislead, as may also the segregation of urine from the bleeding kidney, for the diagnostician may be led to surgical interference in the presence of grave constitutional disease with advanced or latent nephritis in the non-bleeding kidney.

2. The author believes that profuse hæmorrhage with chronic interstitial nephritis is more frequently due to changes in the pelvis of the kidney than to any other single cause.

3. The author does not believe there is such a condition as essential hæmaturia and advances arguments against such assumption.

4. Renal hæmaturia with gouty diathesis, in



which there may be a latent nephritis without calculus.

5. Rare cases of paroxysmal hæmaturia, in which the chilling of the surface provokes bleeding. The majority of these ultimately die of nephritis after a long history.

6. Renal infarct associated with septic fever, often malignant endocarditis, as a cause of hæmaturia is fully considered.

7. Cases of acute or chronic primary infectious pyelitis, non-calculous with moderate hæmaturia. The history of these cases is characteristic, including temperature curve. They are more frequent in women, often during pregnancy and at the menstrual period; the pelvis is infected usually by the bacillus coli communis, occasionally by other bacteria (Fränkel and Friedlander) and the Lenhartz paratyphoid bacilli. The infection is direct, not of the ascending type. There are cycles of fever, associated remissions. The disease is usually right-sided and the kidney is palpable and tender. The paper further considers the causes of painful hæmaturia dependent upon renal invasion.

The author concludes that it is wise to extend our search beyond the kidney to the heart, and blood-vessels; to study blood pressure and the background of the eye in conjunction with modern methods, that safe and sane conclusions may be reached.

**Suter: End Results in Sixty Nephrectomies for Tuberculosis of the Kidney** (Ueber die Dauerresultate von 60 Nephrektomies wegen Nientuberculose). *München. med. Wchnschr.*, 1912, lix, 2437. By Surg., Gynec. & Obst.

Suter reports his experience of the last 6½ years. He emphasizes again the fact that the majority of patients with tuberculosis of the kidney show initially the picture of vesical catarrh. Of his 60 patients, 53 presented these symptoms; only 7 complained of pain in the kidney region, or the disease was discovered accidentally during routine examination of the urine. The author prefers ureteral catheterization; occasionally the separator is valuable. One patient died 24 hours after operation. He was 48 years old. The kidney and bladder were involved and his general condition poor. Autopsy revealed an extensive caseous tuberculosis of the peritoneum; the remaining kidney was intact. Fifty-nine patients survived the operation; of these 4 died later (remote mortality 6.6 per cent). The first of these patients was tuberculous and had undergone a double castration two years prior to the nephrectomy. The second patient, a woman 27 years of age, retained a severe bladder tuberculosis after the operation, with little tendency to healing. She died 2 years later, subsequent to a confinement. The third patient had a bilateral kidney involvement and a tubercular cystitis. This improved markedly, but she succumbed to uræmia 3½ years after operation. The fourth patient, a young man 22 years of age, was operated upon for

incipient right-sided renal tuberculosis. Six months after operation he had renewed symptoms of vesical tuberculosis; the prostate and seminal vesicles became involved. Tuberculin treatment continued for a year was of no avail. He died of miliary tuberculosis. At autopsy the remaining kidney was found to be sound. Fifty-five patients are still alive. Five of these are not considered, because the operation is of too recent a date. The results in the remaining 50 are as follows: Complete cure in 28 (56 per cent); considerably improved, 17 (34 per cent). Of these later, 5 have clear urine but still complain of bladder symptoms, probably due to cicatrices. One patient still has a fistula and 11 have cystitis. Little improvement is present in 5 (10 per cent). One of these cases, a man 45 years of age, has vesical tuberculosis and marked albuminuria. He was operated upon in 1905. Another case was operated upon in 1909 and has a similar bladder affection, but a sound kidney. Three cases were operated upon in 1911 and still offer hope of improvement. One of these, a woman 21 years of age, has improved much in general health, but still shows considerable bladder involvement. Another, a woman 46 years old, has much bladder disturbance and albumin; the remaining kidney is not tuberculous. The third, also a woman, 46 years of age, had bilateral kidney affection prior to operation. One kidney was removed because it was totally destroyed, causing the patient to be bedridden and unable to work on account of the high temperature. The patient is now able to work, but her bladder is involved and she is not able to take proper care of herself. For the prognosis regarding post-operative results the condition of the bladder is of utmost importance. The capacity of the bladder for the three divisions was as follows: The cured, 270 cc.; the improved, 150 cc.; the little or non-improved, 130 cc. Twenty-seven of the patients were males and 33 females. Genital tuberculosis complicated the kidney tuberculosis in 27 per cent of the males (16); only 1 woman had this complication. The frequent complication of the genital organs makes the prognosis for the male more unfavorable. Recoveries in women are nearly twice as numerous as in men. Suter finds no objection to marriage in a woman who has recovered from a renal tuberculosis. Pulmonary tuberculosis as a late complication is not prominent in Suter's cases, while the collective statistics of Israel show over 50 per cent of deaths due to pulmonary tuberculosis. The cases occurring in the cortex were predominant in Suter's cases and exceeded the variety beginning in the papillæ. The kidney was totally destroyed in 16 cases. In a few cases the ureter was occluded. Suter is in favor of operation in renal tuberculosis, despite the few cases of spontaneous recovery which have been published. Procrastination, especially in men, invariably leads to development of genital tuberculosis. Nephrotomy was done twice on account of technical obstacles to extirpation. Both cases were later nephrectomized and cured. In two other cases it was performed



for diagnostic purposes. The result was not satisfactory. Both patients, men between 40 and 50 years of age, died — one from thrombophlebitis of the crural vein and embolism; the other from embolism. Post-mortem examination showed tuberculosis of the split kidney in both cases; the second kidney was sound. This suggests that the treatment of renal tuberculosis must be based upon exact diagnosis, and that it is better to leave uncertain cases unoperated. Suter's experience with tuberculin has not been satisfactory. E. C. RIEBEL.

**Mayo: Nephrectomy without Drainage for Tuberculous Kidney.** *Surg., Gynec. & Obst.*, 1912, xv, 523. By Surg., Gynec. & Obst.

A sinus which is slow to heal often forms following nephrectomy for tuberculosis of the kidney, particularly in debilitated patients in whom the second kidney is somewhat involved. In operating, a large accumulation of clay-like fluid may be found outside the kidney. After removing the kidney, treating the ureter and mopping out the wound as well as possible, the cavity is filled with normal salt solution and the wound closed without drainage. Primary union, prompt and permanent recovery usually follow. The compensatory hypertrophy of the remaining kidney evidently furnishes sufficient hyperemia to destroy such infection as may have existed within the substance of the remaining kidney. The normal salt solution enables material which is infected with tubercle bacilli in the attenuated state to be safely absorbed, because diluted and absorbed quickly before there is an opportunity to establish favorable cultural conditions. In cases in which the tuberculous material has not escaped into the wound and the patient is otherwise in good condition there is, of course, no necessity for using the salt solution, but drainage should not be employed if avoidable.

The stump of the ureter is a source of possible infection in the wound. Many surgeons either remove the kidney and ureter completely at the primary operation, or they suture the stump of the ureter to the skin with a protection of the wound. A ureter treated by injecting 10 to 20 mm. of carbolic acid (fluid 95 per cent) will rarely give trouble later.

Every effort should be made to remove the tuberculous kidney without the escape of its contents, and to secure this result an adequate incision is essential. The patient is placed on the sound side, with a considerable degree of elevation of the loin. A vertical cut frees the twelfth rib from its posterior attachments, and a long transverse incision mobilizes the lower wall of the thorax. In this manner a large kidney can be removed with ease.

**Heitz-Boyer: Pseudo-Cure of Renal Tuberculosis by Conservative Treatment; Partial Exclusion** (Pseudo-guérison de la tuberculose rénale par le traitement conservatif; exclusions partielles). *J. d'Urol.*, 1912, ii, 692. By Journal de Chirurgie.

The author has shown in previous works that so-called cure of renal tuberculosis by medical treatment is only obtained by the exclusion of the dis-

eased kidney, and this pseudo cure is very uncertain, because there may develop insidiously in the other kidney serious nephritic lesions exposing the patient to most serious accidents. There are a few exceptional cases where ureteral catheterization has permitted the collection from a kidney previously known to be tubercular of absolutely clear urine, thus proving the disappearance of the infection and the persistence of kidney function.

Basing his opinion upon anatomical and pathological data, the author states that in these cases we are dealing, not with a curative process in the true meaning of the term, but with the phenomena of exclusion limited to the diseased portion of the kidney. This fact is in harmony with the habitual mode of tubercular renal contamination, this contamination being essentially regional, parcellary.

Furthermore, this partial exclusion, instead of being a safeguard to the remainder of the kidney, seems to expose it to the permanent danger of later contamination. Successive contaminations of different parts of the same kidney, leaving between the attacks an interval sufficiently long to permit exclusion of one focus, may be accompanied before the disease localizes itself in another area by intervals of apparent good health and of clinical remissions, which can easily give the illusion of cure. The author reports a case in confirmation of his thesis. In the kidney shown, active tuberculosis had been present at two distinct periods, separated by an interval of apparent cure, which corresponded to a localized exclusion of the first lesion. J. TANTON.

**Cuthbertson: Displaced and Movable Kidney in Women: Its Symptomatology, Diagnosis, and Treatment.** *Am. J. Dermat. & Genito-Urinary*, 1912, xvi, 582. By Surg., Gynec. & Obst.

The pathologic condition in women produced by displaced and movable kidney has not received the attention it deserves at the hands of the medical profession.

Authors vary widely in their estimates as to the frequency of occurrence of displaced kidney. Some base their observations on post-mortem examinations; others from clinical observations. A safe average would be from 5 to 7 per cent in women and from 2 to 3 per cent in men. There is no question but that a much larger proportion of people have displaced or movable kidneys, but as they cause no discomfort they are not to be considered in this connection.

**Treatment.** There are two ways open for remedying this pathological condition: first, by prosthetic appliances, and second, by surgical means. In thin women the author has been able to apply a kidney pad, which will hold the kidney in place and relieve the symptoms. As soon as the wearing of this pad is discontinued all the symptoms return. The great objection to this pad is that it is very uncomfortable to the patient, especially in the summer, and soon becomes burdensome. The most satisfactory treatment is purely surgical.



Short reports thirty cases treated by the following methods:

	Cases	Cured	Comp. relief	Little or no relief	Death
Transcortical suturing	14	9	1	4	11
Fixation by capsule only	8	3	3	1	1
Pure carbolic acid and gauze sling	8	5	1	2	0

In the transcortical suturing the sutures were passed first through the capsule, which had been stripped off, and then through the kidney substance. Secondly, the capsule was stripped off and sutured on either side to the muscles of the incision. Thirdly, the capsule was swabbed over with pure carbolic acid, the kidney replaced and supported by a gauze sling. He points out that the greater proportion of successes resulted from the carbolic acid gauze sling method.

Rest in bed and the application of heat or cold, with the administration of sedatives, are only applicable in cases of Dietl's crisis. Massage and electricity are only mentioned to be condemned, as they are nothing but a waste of time.

My experience would indicate that the ingestion of highly nutritious foods, with the object of increasing the perirenal fat, is not to be depended on, as two of my cases which relapsed both gained 20 to 30 pounds in weight, and still the kidney did not stay in place.

Billington reports a large number of successes by stripping off part of the fibrous capsule and hanging it over the twelfth rib, reinforcing it by catgut sutures through the kidney.

Carstens makes a vertical incision in the back at the junction of the erector spinæ and quadratus lumborum muscles, and after separating them incises the fibrous capsule by a Z-shaped incision, without delivering the kidney, and stitches the cut edges of the capsule to the edges of the muscles on either side with a continuous catgut suture. He reinforces this by a broad strip of adhesive plaster extending from one side of the body to the other, diagonally, after the incision has been closed.

I have had experience in operating on 25 cases. Of these I have reports on 15. In only 3 of these 15 cases had the kidney again become displaced during a period ranging from five years up to the present. One peculiar feature of the relapsed cases is that none of the distressing symptoms, such as pain, flatulence, and indigestion, which existed prior to the operation, have recurred so far. My only explanation is that at the time of the operation the kinks of the ureter were straightened out, the adhesions broken up, and in the new descent the kidney has prolapsed in a different direction.

My method of operating has consisted in opening the loin by an incision from the outer side of the erector spinæ muscle, beginning at the lower margin of the twelfth rib, and extending obliquely downwards and forwards above the crest of the ilium, as far as necessary. Through this incision the kidney is delivered, examined carefully for stone, hydro-

nephrosis, or tuberculosis, the fibrous capsule incised along the convex border, the capsule peeled back on both sides and rolled up. Three sutures of No. 3 chromicized catgut are first put through the transversalis fascia and the muscles on the outer side, then through the capsule, the kidney cortex, the inner roll of capsule, and, lastly, through the muscles on the inner side of the incision. One suture is placed at the lower pole, the second through the middle of the kidney, and the third through the upper pole. The kidney is then replaced and pushed up into its natural position, taking care that its normal axis is restored, and the sutures drawn comfortably tight and tied. Next, Senn's method of placing gauze below the lower pole in the space formerly occupied by the displaced kidney is resorted to, the end being brought out of the wound for drainage. The incision is then closed by long, stout, silkworm-gut sutures, and a large, copious dressing applied.

**Mursell: Successful Removal of a Tumor in the Adrenal Gland.** *Brit. M. J.*, 1912, Nov., 1179.  
By Surg., Gynec. & Obst.

In 1907 Mursell operated upon a woman aged 39 years, 12 days after labor. She presented a hard movable tumor in the left lumbar region. It was not movable laterally. Symptoms of acute intestinal obstruction were present. A diagnosis of a pararenal condition was made and the abdomen was opened to disclose a retroperitoneal cystic tumor. The contents, consisting of old and recent blood clots and fluid blood, were evacuated. None of the wall of the cyst was removed. In 1912 the patient again presented the symptoms of acute intestinal obstruction. Since the former operation she had been very well, though she had had some loss of weight and had moderate left lumbar pain. In the left loin was a densely hard tumor, movable antero-posteriorly but not vertically. The colon was in front of the tumor. Operation: Oblique left lumbar incision disclosed a large dense tumor with a dense fibrous capsule. The tumor was about twice the size of a foetal head. It was easily separated from the kidney, which was pushed down into the left iliac fossa. Separation from the diaphragm and peritoneum was more difficult. The tumor was reported pathologically to be hypernephroma. The patient left the hospital on the 29th day, well. The author says that this is the first case reported of removal of a suprarenal tumor by the lumbar incision.

M. S. HENDERSON.

**Küss: Foreign Bony Vesical Bodies, Especially Intravesical and Intraureteral Inflammatory Sequestra of Pelvic or Vertebral Origin** (Des corps étrangers osseux de la vessie, et plus spécialement des séquestres inflammatoires intra-vésicaux et intra-urétéraux d'origine pelvienne ou vertébrale). *Reports of Hartmann's Clinics*, 4th series, 1912, 224.

By Journal de Chirurgie.

The author proposes the following classification of bony foreign bodies found in the bladder: 1.



Osseous bodies foreign to the organism introduced (a) through the natural channels, (b) through penetrating wounds (buttons, etc.), (c) by way of vesico-intestinal fistulae. 2. Osseous foreign bodies of embryonal or foetal origin, originating (a) from dermoid cysts, (b) from an extrauterine gestation. 3. Foreign bodies of skeletal origin; (a) traumatic (gunshot wounds, fracture of the pelvic bones), (b) non-traumatic (inflammatory sequestra). Having had a case of the non-traumatic group secondary to a pelvic osteitis, the author collected the cases previously published and discussed this exceptional condition.

The patient, a male 30 years of age, had a pathological past. At the age of 18 he had an osteomyelitis of the pubis necessitating curettage of the bone, and for about 8 years accompanied by abscess formation and fistulae. At the time this osseous lesion appeared cured, the first urinary disturbances became manifest — hæmaturia and pyuria, and on several occasions the patient expelled through his urethra small bony fragments which were designated calculi by his physician. He was treated for gonorrhœal cystitis with permanganate irrigations, and for stricture by linear electrolysis. Shortly after this a perineal abscess appeared which ruptured and led to a fistula formation. At that time (July, 1905) an external urethrotomy was performed and the fistulous tract removed. Two months later the patient came back with an orchitis and a urethral discharge; a foreign body could be felt in the urethra on the proximal side of the cicatrix. Hartmann also performed an external urethrotomy and removed a sequestrum 25 x 11 mm. The patient recovered, but had a new attack of osteitis at the level of the iliac crest which necessitated curettage of the bone.

In the literature Küss has been able to find only 20 analogous cases — 18 in males, 2 in females. He has found 10 osteomyelitic sequestra of the pelvic bones, 9 sequestra of hip-joint origin, and the unique case of Buxton-Browne, in which the intravesical sequestra originated from a Pott's disease of the eleventh and twelfth dorsal and first lumbar vertebrae. The penetration of sequestra as well as the intravesical evacuation of the abscess are effected by a slow and progressive ulceration of the bladder wall. The perforation may ultimately heal. Once in the bladder the sequestrum may be latent. There may be cystitis, etc. Vesical intolerance occurs or the sequestrum may become incrustated and form the nucleus of a phosphatic or urophosphatic calculus. Often, if the sequestrum be small, it will be expelled at time of micturition; if voluminous or irregular, it becomes impacted in the urethra and causes accidents — dysuria, periurethral abscess, urinary infiltration, or fistula.

The symptoms are those of a foreign body. The history, the presence of cicatrices, evidences of an old osteitis or a hip disease are suggestive of the condition, though a correct diagnosis is usually made only at the time of operation. The treatment

consists in the immediate ablation of the sequestra. In 8 cases of sequestra impacted in the urethra, Küss succeeded in 3 cases in removing the sequestra by the natural channels; in 5 cases external urethrotomy was done (4 cures and 1 death), in three cases there were 3 cures; in 14 cases of vesical sequestra or vesical calculi with a bony nucleus; he performed lithotripsy 7 times with 5 cures, 1 recurrence, and 1 death; he incised the bladder 5 times, and had 3 cures and one death. CH. LENORMANT.

**Lewis: The Removal of Ureteral Stone by Cystoscopic Methods.** *N. Y. M. J.*, 1912, xcvi, 1002.  
By Surg., Gynec. & Obst.

The subject is presented from the urological standpoint, and presents a forceful argument against the custom commonly carried out, in both the practice and writings of many practitioners, of ignoring the importance and capabilities of cystoscopic methods in removing or assisting in the removal of stones from the ureter. It is pointed out that most of the contributions on ureteral surgery, both in text-books and in essays, either fail to mention this method, or allude to it in such a way as to indicate that it is a feat more or less dubious and untrustworthy. The impressions of several authors along this line are cited, indicating the lack of esteem in which it is held, and the further fact that they advise going direct from the expectant plan of treatment to the open operation by abdominal incision.

The author quotes from a number of other writers showing that the non-cystoscopic plans of expectant and operative treatment are not all-sufficient, thus indicating that there is both room and need for utilizing the cystoscopic method, provided it has a modicum of success to justify it.

Histories of dangerous or disastrous conditions occurring in connection with open operations in the hands of such men as Deaver, Isaacs, Moschowitz, Peterkin, and others are quoted from the writings of those gentlemen; and the statistics of 134 cases collected by Tenney, in which the open operation was followed by a mortality of surprising dimensions (upwards of 12 per cent), are referred to. In 23 cases collected by Deaver the mortality is given as 10.8 per cent.

The best claim for the efficiency of the expectant plan is made by Lester Leonard, who declares that it proves successful in fifty per cent of all case of ureteral stone. This leaves fifty per cent of all cases *unsuccessfully* met by this method of treatment.

On the other hand, what of the cystoscopic plan? The records of medical history tell us of a sufficient number of successes attained through cystoscopic measures to warrant their use under conditions recognized as favorable for their success. Successes have been reported by Howard Kelly, Moschowitz, Young, Kreissl, Casper, Kolischer, Schmidt, Braasch, Bransford Lewis, and a number of others. The cystoscopic methods employed ranged from the ureteral injection of oil or glycerin to the use



forceps, dilators, scissors, sounds and other cystoscopic accessories, and have referred to calculi impacted in the ureter at various points. Naturally, the lower the impaction in the canal, the more accessible to cystoscopic manipulation and the greater probability for the success of the method. While the low situation makes it relatively easier for cystoscopy, it is generally agreed that it is the low lying stone that is most difficult of access and removal by the open operation. According to statistics, the lowermost portion of the canal is the one in which the great majority of stones are arrested. Tenney declares that comprehensive statistics show they are found here more frequently than in all other situations put together; and over two and a half times as frequently as at any other single location. Therefore it would seem that in selected cases, especially in those of low ureteral impaction, the cystoscopic method of removal offers by far the best hope of success.

### BLADDER, URETHRA, AND PENIS

**Zuckerkindl: Vesical Retention of Urine in Villous Tumors of the Bladder** (Vesikale Harnstauung bei zöttigen Blasengeschwülsten). *München. med. Wchnschr.*, 1912, I, 2570.

By Surg., Gynec. & Obst.

Villous tumors of the bladder, with short or long pedicle, may cause all known forms and degrees of vesical retention of urine, when they are located at or near the orifice of the bladder. Even large tumors of the trigone, however, do not necessarily result in retention. With the first mentioned tumors the sphincter relaxes, the soft tumor sinks into the urethra and is pressed further and further by the detrusor. With the growth of the tumor micturition becomes more and more difficult until the function of the bladder partly or completely ceases. Of 82 cases of pedunculated tumors of the bladder operated on since November, 1908, 3, or 3.6 per cent, had caused retention of urine and were cured by excision. Cystoscopic examination is demanded in all cases of chronic, complete or incomplete retention of urine, as the presence of tumors may easily be mistaken for hypertrophy of the prostate.

**O'Neil: Cancer of the Bladder.** *J. Am. M. Ass.*, 1912, lix, 1786.

By Surg., Gynec. & Obst.

O'Neil limits his discussion to that type of new growth which is early infiltrating and which requires resection of more or less of the bladder wall for its removal. There are no symptoms which will distinguish this from other bladder tumors. A comparatively long time may elapse between the appearance of the first symptoms and extension of the growth outside the bladder. Accurate diagnosis can safely be made by cystoscopy. He advocates transperitoneal cystotomy, and reviews the results so far obtained by this method. At times it will be impossible to tell, previous to operation, whether or not a radical removal can be attempted. An ex-

ploratory suprapubic cystotomy should be done, and then if radical excision seems advisable it can be done by extending the operation to the transperitoneal route.

L. G. DWAN.

**Hartmann: A Few Remarks Concerning Forty-Seven Operations for Tumors of the Urinary Bladder** (Quelques réflexions à propos de 47 opérations pour tumeurs de la vessie). *Reports of Hartmann's Clinics*, 1912, 4th series, 207.

By Journal de Chirurgie.

With the exception of one case of myoma, which recurred after two removals by the abdominal route and which eventually ulcerated the abdominal wall and caused death, all the tumors observed by Hartmann were epithelial neoplasms, papillomata, or carcinomata. The author differentiates two types of tumors—tumors projecting into the cavity of the bladder and infiltrating tumors.

**Non-infiltrating tumors.** Twenty operations upon 15 patients. Two cases have been operated upon several times for recurrence. The immediate results are good, with only two deaths, both independent of the operation (strangulated hernia and cerebral hæmorrhage). The late results are encouraging. Nine cases have been followed, and the author finds there have been 6 cures lasting from three to seven years, 2 recurrences, and one death, due to rectal cancer.

**Infiltrating tumors.** He has had 26 cases. In only 9 patients did he perform a radical operation; that is, a partial cystectomy. The results as given—one operative death, one death from pyelonephritis, two cures that are now five and nine years old—are not bad when we bear in mind the usual gravity of these tumors. These are cases in which the summit of the bladder was resected.

In 17 other cases the author performed palliative operations—vesical cystotomy, supplemented by curettage and cauterization of the tumor. The operative mortality is high. The results obtained are so mediocre that Hartmann believes that in the absence of intolerable pain or of hæmorrhage directly menacing life, it is better not to intervene.

CH. LENORMANT.

**Judd: Results in the Treatment of Tumors of the Urinary Bladder.** *J. Am. M. Ass.*, 1912, xx, 1768.

By Surg., Gynec. & Obst.

In the surgical treatment of tumors of the urinary bladder, the anatomic relationship must be preserved in order to maintain function. While most tumors of the bladder are papillomata, they occur frequently in multiple form. The large tumor is apt to overshadow the smaller tumors, one of which may easily escape notice. A large percentage of tumors of the bladder occur in the base or on the wall close to the base at or near one of the openings of the ureters or of the urethra. These positions render the lesions extremely inaccessible to the surgeon, making their treatment most difficult, with a high percentage of recurrences.



The methods of operative procedure and treatment must be determined (1) by the general condition of the patient, (2) by the cystoscopic findings. Arteriosclerosis, renal insufficiency, myocarditis, etc., are factors contraindicating radical procedures. Bimanual examination by vagina in the female and by rectum in the male is most important in the diagnosis, as thus we may be able to determine the presence and extent of induration. Many times cases will be eliminated in which otherwise operation might be attempted. When possible a specimen of the growth large enough for a microscopic examination should be excised through the cystoscope.

One of the chief advantages in the transperitoneal operation is that it affords an opportunity to observe the pelvic lymph nodes and the abdominal viscera.

The technical points in the various types of operations for tumors of the urinary bladder have changed very little in the past few years. We believe that in these operations, as well as in operating on any other malignant tumor, the tumor should either be excised with the cautery, or the cut edges remaining after the tumor has been removed should be thoroughly cauterized. This is especially important in all papillomata.

If patients can be seen earlier and the technique can be improved so that a more radical excision may be done with a greater degree of safety, the results in the treatment of tumors of the bladder may be made to compare favorably with the results in the treatment of malignancy in other organs.

**Lower: Suprapubic Cystotomy for Vesical Calculus; Indications and Operative Procedure.** *J. Am. M. Ass.*, 1912, lix, 1956.

By Surg., Gynec. & Obst.

Lower says each year brings a better record for the suprapubic operation, while there has been but little advancement for the crushing operation. A very large prostate, an encysted stone, or a stone with a foreign body as a nucleus are contraindications to the successful use of the lithotrite. For these cases suprapubic cystotomy is recommended.

Indications for suprapubic cystotomy are: stone too large or too hard to be grasped by the lithotrite; encysted or adherent calculi; presence of multiple stones; in the young; in old men with prostatic hypertrophy; calculus projecting from the end of the ureter and foreign body as a nucleus of the stone. If the bladder is properly closed, a week or ten days is all the time needed for a complete cure. He has operated by the suprapubic route 53 times in 49 cases with no deaths. Until a practical observing lithotrite is invented, suprapubic cystotomy must remain the method of choice by the majority of operators.

L. G. DWAN.

**Greensfelder and Gatewood: A Case of Pseudohermaphroditism.** *Surg., Gynec. & Obst.*, 1912, xv, 582.

By Surg., Gynec. & Obst.

A case of pseudohermaphroditism belonging to the masculinus internus type is reported by Greensfelder and Gatewood, of Chicago. The patient was

27 years of age, married, and had one child. He entered the hospital on account of a dull, aching pain in the back and the sacral region, which had been present intermittently for eight months, during most of which time he had blood in the stools. Constipation had been present and he had passed much gas and mucus per rectum. Eight months previously he had been operated on for an inguinal hernia, and was told that a uterus and ovary had been found. In less than a year he had lost 39 pounds. Had no cough and no night sweats. Previous and family histories negative. On examination a diagnosis of carcinoma of the rectum was made, and the patient was operated on by Dr. Greensfelder. When the condition described below was found, Dr. Frankenthal was called in to perform the gynecologic part of the operation. The broad ligaments were found in the usual location. In the position usually occupied by the uterus, an organ resembling a uterus with a much elongated cervix was found. In about the normal position of the ovaries were two oval bodies, which were thought at the time of operation to be ovaries. A tumor mass, about the size of a small apple, was adherent to the rectum, and there was other evidence of carcinoma. Numerous hard masses were present about the base of the organ which was supposed to be the uterus, and it also was thought to be carcinomatous. The "uterus and adnexa" were removed. About eight inches of rectum was then resected and the two ends of the gut brought together by an end-to-end anastomosis.

The specimen removed at operation consisted of two ovoid bodies (thought at the time to be the ovaries, but which on microscopic examination proved to be the testicles), two triangle shaped bands, the broad ligaments, and an elongated, roughly cylindrical mass, the uterus, lying between them. The seminal vesicles were placed on either side of the uterus and emptied into the prostatic urethra. A small oval body just below each testicle and extending a little external to it proved to be epididymes. Ducts from these passed close to its sides until they emptied into the prostatic portion of the urethra. Ducts representing the Fallopian tubes ran downward and outward from the two cornua between the layers of the broad ligament.

#### GENITAL ORGANS

**Fuller: Seminal Vesiculotomy, Its Purpose and Accomplishments.** *J. Am. M. Ass.*, 1912, lix, 1959.

By Surg., Gynec. & Obst.

Fuller refers to his former article for description of this operation. He offers suggestions for dissection of cadavers in the knee-chest posture, and briefly discusses the regional anatomy. He groups his cases according to the prominence of clinical symptoms: (1) urinary; (2) genital; (3) nervous and mental; (4) rheumatic. He has done 254 operations of seminal vesiculotomy with no mortality, and reviews the results obtained in the foregoing groups. Retention follows about once in five cases.



Of 89 rheumatic patients there was not one who was not relieved in a most radical manner. Eighty per cent were well and free from all symptoms when they passed from observation a month or six weeks after operation.

L. G. DWAN.

**Judd: The Technique of the Operation of Suprapubic Prostatectomy with a View to Reducing the Length of Time of Convalescence and Insuring a Good Functional Result.** *J. Lancet*, 1912, xxxii, 589.

By Surg., Gynec. & Obst.

Until within the past few years the perineal operation for removal of the hypertrophied prostate was the operation of choice in many hospitals in this country. Advocates of this method argue, first, that the mortality is less, and second, that the time of convalescence is shorter, since the perineal wound heals more quickly than the suprapubic. A more careful study of the cases, however, would indicate that the mortality is not directly the result of the operation but depends upon the functional capacity of the kidneys, the condition of the heart, and the general circulation, which is true in either operation.

The treatment is usually divided into two stages: First, to relieve the patient of residual urine and to treat the cystitis should it exist. Urine retained in the bladder should be withdrawn gradually. In many instances it will require several weeks to carry out this treatment. Second, after the reaction due to the withdrawal of the urine has passed, the removal of the obstructing prostatic gland can be carried out. This procedure will be accomplished more satisfactorily and safely because of the preliminary treatment.

The functional results so far as the patient's ability to absolutely control the urine is the most important factor in the treatment of these cases. This result is attained in the perineal operations in a large percentage of cases and always follows the suprapubic method.

**Operation.** The abdominal incision is made in the usual way and the recti muscles separated. The fat in the suprapubic space is dissected off from the fundus of the bladder and the peritoneum pushed back. It is very essential that the peritoneum be stripped well back and that the bladder be lifted up as far out of the abdominal incision as possible. With the fundus of the bladder lifted well out of the abdominal incision, the wound is packed off with gauze; the bladder, which a few minutes before has been cleaned as thoroughly as possible, is now opened by free incision, usually about 2 inches. It is well at this stage of the operation to examine the bladder for stones or other lesions. This is especially important if it has not been possible to make a satisfactory cystoscopic examination. With gloved fingers of the right hand in the rectum, the gland can be pushed well up into the bladder. The first, and if necessary the second, fingers of the left hand are introduced into the bladder. The enucleation should include the entire hypertrophied part of the prostatic gland. If enucleation be done within the capsule and the hypertrophied part of the

prostate be entirely removed, there will be very few cases in which it will be necessary to use even a gauze pack to stop the bleeding. Sharp hæmorrhage may be caused by dissecting outside the capsule into large vessels or by leaving a piece of the prostate in the capsule. If the gland be entirely removed, the capsule will contract and the chief bleeding will be the oozing from the mucous membrane edge in the urethra and bladder.

As soon as the gland is removed the bladder is freely irrigated. If oozing be slight, as will be the case in a good percentage of cases, the wound in the bladder is closed completely, as drainage through the urethral catheter will be sufficient. If oozing continues and clots form in the bladder, a fair sized tube is accurately sutured into the upper angle of the wound in the bladder. This tube is removed in 24 hours and a catheter inserted.

The chief disadvantage in suprapubic operation is infection in the space of Retzius, and this technique gives as little chance of infection as possible.

**Burrett: The Surgery of the Prostate; with Deductions from Fifty Consecutive Cases.**

*J. Am. Inst. Homeo.*, 1912, v, 452.

By Surg., Gynec. & Obst.

To the average person presented for surgical relief of the enlarged prostate, an extension of five or ten years of life is the object of greatest moment. The control of urinary stream, with absence of fistula and the lowest possible mortality, are of most importance in 99 per cent of these cases. As the advice for early operation is more freely accepted, the question of retaining normal sexual function will become correspondingly more important. It would seem that a complete removal of the prostatic urethra were more advisable than to have a part of it remaining, for the reason that the bladder may settle down into the cavity left by the removal of the hypertrophied prostate and any remaining urethra might cause obstruction or tortuous passage.

The after care for this operation is easy while in bed. We are able to get our patients out of bed in from five to seven days, except in the case of the oldest men. The upright position thus facilitates better drainage and seems to encourage the flow through the normal urethra more promptly.

We find the median vertical skin incision always sufficient, and it has the advantage over the inverted V incision of healing more promptly. The urethra is incised at the apex of the prostate, and a clean cut made through the floor of the prostatic urethra, guided by a grooved staff. The prostatic capsule is opened and the gland peeled out from within the urethra. If found necessary, the prostate is brought within reach of the finger by means of the Young prostatic tractor. Resulting from our first 50 prostatectomies there were two deaths. There was one post-operative urethral perineal fistula as above described. Pathological findings show six cases of adenocarcinoma. One of those cases is dead, and the others are well and living at the present time. The remaining 44 cases were adenomatous hyperplasia,



fibrous hyperplasia, and chronic gonorrhœal inflammations, their frequency being in the order mentioned.

In conclusion, perineal prostatectomy is an operation of low mortality rate; it offers drainage at the natural point; it makes possible the shortest time in bed, and the final results are equal to the suprapubic route when the operation is properly performed.

**Wilms: Results of Perineal Prostatectomy with Lateral Incision** (Die Erfolge der nach meiner Methode ausgeführten Prostataktomien mit seitlichem Schnitt). *München. med. Wchnschr.*, 1912, I, 2548.  
By Surg., Gynec. & Obst.

The procedure for prostatectomy is as follows: Test of function of kidney with indigo-carmin injection. For epidural anæsthesia, injection of 20 cc. physiologic salt solution, with 4 to 5 drops of adrenalin into the sacral canal and injection of 20 cc. of a 2 per cent novocain solution subcutaneously. Introduction of Young's retractor. Incision parallel to the lower os pubis and  $1\frac{1}{2}$  to 2 cm. from the symphysis. Incision of fascia perinei superficialis. Blunt separation of the tissues. The point where the retractor enters the prostate can easily be felt with the finger. The capsule lying below the prostate is then perforated with a dressing forceps, which is opened to allow the entrance of a finger to loosen the gland as far as possible from its surroundings. The retractor is then removed and, while the assistant presses upon the full bladder, the prostate is completely freed with the finger and extracted with a forceps. The results in the 31 cases thus operated upon are such that catheterization is needed in none, and no fistula has remained, the latter closing in from 14 to 20 days after operation. All patients became continent, and in no case was the sexual function disturbed.

**Hartmann: Technique of Transvesical Prostatectomy** (Technique de la prostatectomie transvésicale). *Reports of Hartmann's Clinics*, 4th series, 1912, 101.

**Hartmann: Immediate and End Results of 118 Operations for Prostatic Hypertrophy** (Résultats immédiats et éloignés de 118 interventions opératives pour hypertrophie prostatique). *Id.*, 110.  
By Journal de Chirurgie.

These two memoirs give the experience of Hartmann in prostatic hypertrophy. The operations performed are as follows:

1. Suprapubic cystostomy, 6 cases. These are not of recent date, as Hartmann has more or less given up this operation since the advent of prostatectomy. Two patients died shortly after operation, owing to the continuance of the infectious symptoms. The others were cured operatively but did not live a long while afterwards. One lived ten years, with a very good functional result. The best procedures consist in making a narrow opening and in suturing the bladder mucosa to the skin, though this is not always feasible.

2. Bottini operation. Three patients were operated on ten years ago. In one patient it was necessary to perform secondarily a prostatectomy.

3. Perineal prostatectomy. Four cases of partial prostatectomy, with bad results; 1 death and 3 failures (persisting retention). Forty-three subtotal prostatectomies have given 8 deaths and 35 cures; in 2 cases death was due to secondary hæmorrhage, and in 3 to pulmonary complications. Other accidents have been noticed: orchitis (10 cases), rectoperineal fistula (2 cases). Late results are known in 27 cases; 18 do not present any urinary disturbances; 9 have either a slight cystitis or incomplete retention; none have incontinence.

4. Transvesical prostatectomy. Results of partial operations are not much better than perineal operations. Eight cases with 3 deaths, and among the recoveries only 2 are complete.

For transvesical prostatectomy Hartmann follows the technique of Fryer. Chloroform anæsthesia is used and the bladder is distended with a concentrated solution of boric acid. The prostate is enucleated and then the margins of the vesical incision are sutured to the borders of the musculo-aponeurotic wound, thereby avoiding retraction of the bladder and urinary infiltration. This technical detail is important. Against hæmorrhage, he uses neither forceps, ligatures, tamponade, nor massage of the cavity left by the enucleation. The tube of Fryer or de Duchastelet is left in place for from four to seven days. It is removed as soon as the urine is clear, and a sound is placed in the urethra.

Hartmann has performed 53 prostatectomies with this technique, and has had 44 cures and 9 deaths: 1 due to spinal anæsthesia, 1 to anuria, 4 to pulmonary complications, 2 to urinary infiltration, 1 to pyonephritis. He has had reports from 29 patients; 24 have perfect micturition and report being without the slightest urinary disturbance. The end results of transvesical prostatectomy are much better than those of perineal prostatectomy.

CH. LENORMANT.

## MISCELLANEOUS

**Cabot: The Present Standing of the Operation of Litholopaxy.** *J. Am. M. Ass.*, 1912, lix, 1954.  
By Surg., Gynec. & Obst.

Cabot believes that litholopaxy is the operation of choice in all uncomplicated cases of stone in the bladder. This operation has a mortality of from 1.6 to 6 per cent, while in suprapubic lithotomy the percentage is from 10 to 20 per cent. The cystoscope gives the operator ample opportunity to inspect the interior of the bladder. The skill required in the use of the lithotrite is no greater than that needed in an ordinary cystoscopy. In prostatic obstruction, with secondary stone, the removal of the stone is merely an incident to the removal of the prostate. Thus most of the cases of real difficulty in the domain of litholopaxy are removed, and for the crushing operation are left the uncomplicated cases with practically no mortality.

L. G. DWAN.



## SURGERY OF THE EYE AND EAR

**Wood: Some of the Accidents and Complications Attending or Shortly Following the Extraction of Senile Cataract.** *Illinois M. J.*, 1912, xxii, 541.  
By Surg., Gynec. & Obst.

Most of the accidents and complications that arise during and after cataract extraction are the result not solely of defects in the manipulative skill of the surgeon, but are due quite as often to lack of control on the part of the patient. Other causes of trouble are undesirable local conditions, immaturity of the cataract, the septic condition of the eye or its appendages, or lack of the usual aseptic precautions.

An idiosyncrasy against belladonna in the form of atropin irritation, dermatitis and conjunctivitis, shows itself in swelling of the conjunctiva and roughness of the palpebral skin. It is never accompanied by pain, but generally is attended by some itching and ocular discomfort. It is commonly observed several days after the first instillation of the drug, and may be associated with considerable thickening of the skin surface and a seromucous discharge from the eye. The mydriatic should be changed to duboisin or hyoscin, the dose reduced to the minimum, and a simple ointment applied to the roughened lids.

It occasionally happens that, after the puncture or counter-puncture, the surgeon discovers that he has inserted his knife upside down. Knapp recommends that the knife should be turned on its long axis so as to entirely reverse its position, and thus to continue the section, but the author does not see how it is possible, with a Græfe knife of average thickness, to accomplish this feat without considerable loss of vitreous and much damage to the cornea. Under these conditions it is better to withdraw the knife and wait until the original wound has healed.

Melville Black uses the usual cataract knife with a blunt point, which is inserted into the original corneal opening with the proper edge up and the section completed.

The author believes that a restricted outlet for capsular and lenticular tissues spells a dangerous traumatism, iridic hernia, secondary cataract, post-operative iritis, and other forms of a lingering convalescence. One should make a sufficient, even a generous, primary incision; and it is better to make it too large than too small.

It is better not to manipulate the lips of the wound too much in an effort to expel blood from the anterior chamber. After making a conjunctival flap, the whole eye should be gently flooded with warm boric acid solution, and the blood, in all its forms, coaxed out of the eye with "dabs" of cotton or by the use of the anterior chamber syringe. A small quantity of blood in the anterior chamber soon

becomes absorbed and does little harm except to obscure, for the time, the intraocular field of operation.

Care should be taken to use a very sharp or needle-pointed cystotome.

Wood highly recommends the concentrated, artificial, oblique illumination for the cataract operation, as well as for every procedure that requires the distinct definition of minute details of the cornea and in the anterior chamber. He prefers the Nernst light.

Prolapse of the iris is due mostly to injury to the parts or any violence that may reopen the wound. Sneezing, coughing, straining at stool, and vomiting are among these, as well as accidental blows on the dressings, finger thrusts, squeezing of the lids, sudden movement in or out of bed and undue pressure of the bandage, mask or shield, etc.

Care should be exercised in removing the dressings at the first few inspections of the eye following an extraction, because the iris may be washed or pushed into the wound by the sudden outflow of aqueous induced by the opening of the lids and the consequent disturbance of the wound edges.

Loss of vitreous most frequently attends or follows the delivery of the lens, although it may take place as soon as the opening in the eye-ball is large enough for its exit. It rarely occurs during the healing of the wound or after it has closed.

The most common immediate causes of vitreous loss are spasms of the orbicularis brought about by anything that makes the patient "squeeze up" the eye; too marked use of the fixation forceps; undue pressure on or dragging of the capsule forceps or cystotome; a prolonged or too rapid section; an unexpected upward rotation of the eye when an instrument is in the anterior chamber, and too much force employed in an attempt to expel cortical matter or capsular remnants.

Post-operative iritis is probably always associated with irritation or inflammation of the rest of the uveal tract. It varies greatly in intensity, from the simple form, due to mechanical irritation of the iris from retained lens matter, to the most pronounced cases, in which direct infection is the evident source of the inflammation.

Post-operative iridocyclitis may generally be regarded as a more pronounced form of infection than that just described, and is, as a rule, followed by loss of useful vision. Cases present, within 24 hours after the extraction, the symptoms of acute iritis soon followed by marked evidence of an intraocular inflammation, i. e., a blurred, swollen iris with exudates at its margins.

Now and then the eye becomes quiet, and some



form of iridotomy may eventually be instrumental in restoring a fair amount of sight.

The mental balance of old people is especially prone to be disturbed by putting them in a dark room of a strange hospital, to say nothing of the anxiety connected with a serious operation.

The majority of insane patients recover under sedatives and judicious moral suasion. In every case the condition of the bladder, bowels, urine, blood, etc., should receive attention.

**Suker: The Use of the Conjunctival Flap in Perforated Wounds of the Globe.** *Illinois M. J.*, 1912, xxii, 550. By Surg., Gynec. & Obst.

The conjunctival flap is made as follows: At the site of injury, or in the most immediate area, the conjunctiva is dissected loose the requisite distance beyond the lateral edges of the wound. It is next dissected loose backwards as far as it is deemed necessary, depending on the size of the wound to be covered. You either dissect the conjunctiva half-way around the corneal circumference or less. If less, then make a flap by two vertical incisions, one at either end of the limbal cut. The flap is now stretched over the lesion and fixed by sutures into the conjunctiva on the opposite side. Several sutures are necessary; in fact the flap is simply anchored, as it were, to the conjunctiva on the opposite side. The sutures pass through a fold of the conjunctiva. In this way either the whole or a portion of the cornea is covered. The sutures are removed within four or five days.

By means of this flap, a class of cases involving the cornea and adjacent sclera, which heretofore meant either a permanently irritable eye or an enucleation, are no longer sacrificed. Furthermore, a class of cases entailing either a total or partial loss of corneal substance, because of injury or disease, which heretofore necessitated enucleation or one of its substitutes, need not any longer be thus sacrificed; the same is true of extensive wounds of the sclera. The prolapsed portions in either case are amputated before covering the wound with this flap. Necessarily this mode of saving a globe is not available when the foreign body cannot be removed or extensive infection of the interior wound has already taken place.

Corneal fistulæ, which at times prove very obstinate, yield readily to this conjunctival flap.

This conjunctival flap is particularly applicable in dealing with scleral wounds. 1. It is a protection against infection. 2. It furnishes the only means by which uniform pressure is secured, thereby insuring the exact juxtaposition of the sclera, retina, and choroid. This latter is not achieved when scleral sutures are resorted to, inasmuch as they necessarily cause by their insertion a separation between choroid and sclera. When large areas of scleral tissue are sacrificed it is not advisable to attempt the wound with catgut and then put the conjunctival flap on top of this; but it is better to depend on the latter alone, which, under these

circumstances, must be rather large and thick. Furthermore, any prolapse of vitreous or uveal tract must be previously amputated.

The ever-advancing and sloughing corneal ulcer, whether of the serpiginous type or not, offers a large field for the application of this flap. If the base of the ulcer be curetted, the edges vivified and a flap brought over, being well pressed into the ulcerated areas, results well-nigh marvelous are the recompense. Should the cornea perforate in these cases, it is an impossibility for the iris to prolapse, as the anterior chamber is immediately restored. The iris, if prolapsed, is excised and freed from its attachments to the edges of the perforating wound. The progress of the ulcer is effectually checked and many times economic vision restored upon later resorting to an optical iridectomy.

This flap is especially of great service in cases of gonorrhœal ophthalmitis, with perforations of the cornea and danger of its being lost because of the various prolapses of its contents. In such cases the eye must be carefully manipulated and the flap so placed that drainage is not altogether thwarted. If in these conditions the anterior chamber be filled with Haab's iodoform rods or simple iodoform powder, you will be surprised at the satisfactory results.

Goldzieher and Kuhnt have even used this flap for the protection of the cornea in gonorrhœal ophthalmia after perforation has taken place and to prevent the extensive ingress of intraocular infection. I myself have employed this flap in several cases of this kind.

This conjunctival flap may at times be of service in combating extensive central corneal concities. Instead of cauterizing according to the Elsching method, the apex is excised and the flap brought over. This is advised only for aggravated cases. Much more support is offered to the cornea in this manner than by any other method, and the resultant acuity of vision is at least equivalent if not greater. An optical iridectomy is in most instances obligatory after any measure intended to overcome the conicity or staphyloma. If this flap is not too broad or thick and has been properly placed, the optical iridectomy need not be any larger than for the other conditions demanding such an iridectomy.

Rarely, if ever, does this flap slough or ulcerate. If it does, then the causative conditions underlying it are general rather than local. For, as far as local conditions, such as infecting bacteria, tension in flap, undue pressure, etc., are concerned, they can be controlled. Again, it is advisable to have at least one or two blood-vessels coursing uninterruptedly to the very apex of the flap. With the blood supply assured, and the flap of requisite size, the untoward results are greatly minimized.

If the flap properly overlaps the involved area and if the edges of the flap are not allowed to roll up on themselves, particularly so on the under surface, the operation will not be a failure. So also does the thickness of the flap play an important rôle; this



depends largely on circumstances and conditions to be achieved. Usually a flap that is thin at its apex and gradually increasing in thickness toward the base is the desirable one. Then, too, the under surface of the flap must be free from hæmorrhages or clots, and the part to which it is applied must likewise be in a similar condition. In other words, the exact principles as followed for skin grafting are to be observed. The flap must be at all times fairly well stretched to avoid any puckering or rolling up of the edges, and the eye must be so firmly bandaged as to insure practical immobility.

To briefly summarize, this flap is applicable in:

1. Extensive wounds of the cornea and sclera, with or without loss of substance in either, or prolapse of ocular contents.
2. Corneal fistulæ.
3. Serpiginous or perforating corneal ulcers.
4. Corneal or scleral staphyloma.
5. Prolapses of ocular contents.
6. Hernia of the iris.
7. Extensive conical cornea.
8. Untoward conditions in wounds following cataract extraction and the like.
9. As a protection for the cornea in conditions similar to gonorrhœal ophthalmia, in which extensive perforations and resulting intraocular infections are liable.

**Parsons: The Treatment of Unilateral Cataract.** *Lancet*, 1912, clxxxiii, 1289.

By Surg., Gynec. & Obst.

Parsons discusses the advantages and disadvantages to the patient of having a unilateral cataract operated when the other eye has sufficient vision so that he can carry out his ordinary duties, and gives it as a general rule that the indication is to operate such cases in the young, but not to do so in the adult or aged.

He believes in repeated needlings in the young, using every precaution to prevent excessive swelling of the lens matter, and the necessity of evacuating the contents of the anterior chamber, as his experience as a pathologist has taught him that the few cases of needling which go wrong do so as a result of curette evacuation.

The indications for operation on the aged are when the field of vision is of prime importance, or the appearance of the eye prevents the patient from earning a living; and, from a technical standpoint, the appearance of signs of hypermaturity.

C. G. DARLING.

**Wolf: Septicæmia of Otic Origin.** *Ztschr. f. Ohrenheilk.*, 1912, lvi, Nov. By Surg., Gynec. & Obst.

Wolf reports in detail 22 cases of septicæmia of otic origin from Kümmel's practice. These 22 cases include 17 in which thrombophlebitis was present. In spite of this complication no death occurred; on the whole the prognosis was favorable. The treatment recommended consists chiefly in the drainage of the infected focus, be this infection of

the middle ear, an extradural abscess, or thrombophlebitis of either the lateral or the jugular sinus. In these cases the author believes that ligation of the jugular vein is only allowable in such cases as show a lesion involving this vein. M. C. PINCOFFS.

**Crowe: An Aid for the Diagnosis of Conditions Associated with an Obstruction to the Outflow of Blood from the Brain; with Special Reference to Sinus Thrombosis of Otic Origin.** *Bull. Johns Hopkins Hosp.*, 1912, xxiii, 321.

By Surg., Gynec. & Obst.

The author first describes the two main pathways by which the venous blood is returned from the brain by the symmetrically placed lateral sinuses, jugular bulbs, and internal jugular veins, as well as the collateral circulation in case of obstruction to the outflow of blood through either of these main pathways, and he further illustrates this by a diagram showing the intracranial and extracranial venous systems and their anastomotic vessels. In the beginning he states that if there is sufficient obstruction to the outflow of blood through the intracranial system, these anastomotic vessels will become engorged with blood. At least two of these vessels, the supraorbital and ophthalmic veins, can be seen on the surface of the skin. The retinal veins are the only branches of the intracranial venous system which cannot be directly observed. These vessels, however, as he states, may be studied very conveniently with the aid of an electric ophthalmoscope.

Stasis in the intracranial venous system, as may be produced by compressing both internal jugular veins, will immediately manifest itself by a dilatation of the veins of the fundi. As the stasis increases the anastomotic vessels will also begin to dilate. If the pressure on the right jugular vein is suddenly released but that on the left is still maintained, or vice versa, it will be observed that the distended veins in the fundi and in the skin immediately collapse and return to their normal size. This is to be explained by the fact that in normal individuals the connections between the two internal jugulars are so free that one side alone may be occluded without producing any marked evidence of stasis. If it were otherwise, one would expect to find evidence of stasis in the eye grounds in every case of sinus thrombosis. But such is not the case.

The author's experience has led him to conclude that any acute obstruction to the outflow of blood through the sigmoid sinus, jugular bulb, or internal jugular vein on one side may be diagnosed by means of his test. This test is based on purely mechanical principles.

From the examination of 50 normal individuals the author has arrived at the following conclusions:

1. No appreciable evidence of stasis is seen in the retinal or supraorbital veins when one internal jugular is compressed with the finger.
2. Pressure on both internal jugular veins at the same time produces a marked dilatation of the veins of the fundi and of the anastomotic vessels connect-



ing the intracranial with the extracranial venous circulation.

3. When the pressure is suddenly released on one side while it is maintained on the other, the engorged veins of the anastomotic system and the fundi will immediately empty.

Crowe states that if the results in any individual case differ markedly from those above, it must be concluded that there is either an anomaly of the intracranial venous circulation, or some pathological condition which is obstructing the outflow of blood from the brain.

Among the clinical conditions which may be associated with an obstruction to the outflow of blood from the brain, the formation of a thrombus in the sigmoid sinus, secondary to an infection of the middle ear, is by far the most frequent and the most important. Sinus thrombosis appears with equal frequency as a complication of acute and chronic cases of otitis media, and not infrequently the diagnosis offers great difficulty. Because of the relative anatomical position of the jugular bulb to the middle ear, it is possible to have a primary bulb thrombosis, with the sigmoid and transverse sinuses normal in appearance; and the condition may not be recognized, even at an exploratory operation. One of the cardinal symptoms of sinus thrombosis is a remittent fever with chills; due to the serious nature of the malady, however, it is desirable to know at an early stage of the disease whether the symptoms are really due to a sinus thrombosis or to other conditions, such as angina, pneumonia, malaria, the initial stage of one of the infectious diseases of children, meningitis, or brain abscess.

As the author has already stated, no normal person has as yet been observed in whom the compression of one jugular alone produced any marked degree of stasis in the retinal veins. On the other hand, in all normal individuals a quite evident dilatation of these vessels results when simultaneous pressure is made on both sides of the neck. Since a sinus thrombosis offers a more or less complete obstruction to the outflow of blood into the internal jugular vein on the same side, it naturally follows that in such cases there will be unmistakable evidence of stasis as a result of compressing with the finger the internal jugular vein on the opposite side. When it is possible to examine a patient before the onset of complications and find that both jugular veins are patent, and at a later period, associated with an elevation of temperature, to find that the blood is not passing down one side of the neck as freely as down the other, the author states that his observations have led him to believe that this sign may be taken as positive evidence that there is a sinus thrombosis.

GEO. E. BELLBY.

**Oppenheimer: Pro and Con of Maintenance of the Retroauricular Opening after the Radical Mastoid Operation.** *Med. Rec.*, 1912, lxxxii, 975.

By Surg., Gynec. & Obst.

The main necessity for the maintenance of the posterior opening is in those instances of diffuse

cholesteatoma of the mastoid region where it is seemingly impossible at times to remove the proliferating epithelial masses in their entirety, since they are so intimately associated with the microscopic recesses in the osseous tissue.

The time when the posterior opening should be closed in such cases of cholesteatoma where a so-called permanent opening has been maintained will depend entirely upon the condition of the epithelial lining of the eviscerated cavity, for should the least trace of the affection be in evidence, it will be apparent that to close the wound, whether it is of several months' or several years' duration, in the presence of the heaping up of epithelial masses, would endanger the entire result of the original operation. It is essential, therefore, in determining when such surgical procedures should be adopted, that all traces of cholesteatomata or diseased tissues, whether osseous or otherwise, should have entirely disappeared and remained absent for several months at least before such measure can be applied.

In a series of 83 radical operations, the posterior opening was maintained in 5. These cases recovered with an auditory canal larger than before the operation, which permitted free inspection and treatment of every portion of the large osseous cavity. Because of the disfigurement caused by a large opening behind the auricle, this should be closed as soon as is consistent with the cessation of pathological changes within the osseous cavity.

At the same time, the cavity should be under observation for a sufficient length of time for one to be convinced that there is not the slightest evidence of heaping up of epithelial masses in any of its parts, and that the slight exfoliation that often takes place can be as easily removed from the enlarged meatus as it can from the post-auricular opening.

**Kabatschnik: A New Test for Hearing** (Eine neue Hörprüfungsmethode). *Monatschr. f. Ohrenh., Laryngol. u. Rhinol.*, 1912, xlvii, 1413.

By Surg. Gynec. & Obst.

Kabatschnik describes a new hearing test in which he uses the external auditory canal for bone conduction instead of the mastoid process. For this purpose the external auditory meatus is closed with the finger, or the tragus is pressed by the finger against the aural entrance and the handle of a tuning fork placed firmly upon the finger nail. If a tuning fork is held near the open ear and removed the moment the sound ceases, then reapplied in the described manner upon the finger nail, the sound of the fork will again be heard, although it has not been struck a second time. If the test is positive, we have to deal with an obstruction of the sound conduction; if negative, we have to deal with an affection of the sound-perception apparatus. By this method bone conduction from the external auditory meatus of the diseased side into the sound ear is hardly possible, and should be a good method of exposing patients.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

**Peugniez and Labouré: Nasopharyngeal Fibromata Treated by Paralateral Nasal Rhinotomy** (Fibromes nasopharyngiens: Traitement par la rhinotomie paralatéro-nasale). *Arch. internat. d. Laryngol.*, 1912, xxxiv, 571. By Journal de Chirurgie.

Nasal fibromata at times originate from the fibrous tissue situated between the nasal and odontoid processes, often from the ethmoid, sphenoid, and ptergoid processes and the vomer. These tumors are of nasal origin. The examination of the nose and rhinopharynx must be conducted with great gentleness, thereby minimizing the danger of possible hæmorrhage. First, the anterior nares are mopped with adrenalin solution and then examined with the rhinoscope. This is followed by posterior rhinoscopy and, finally, a digital examination. If the tumor be well pediculated and can be seized with a loop or spread out upon the rhinopharynx and disimplanted by the Doyen or Escat method, it can be removed by the natural passages.

The artificial routes of extirpation are three in number: the palatine, the anterior nasal, and the lateronasal. The lateronasal route (Moure et Sebileau) is the method of choice. It includes the following steps: first, an incision extending in the nasolabial groove from the internal angle of the eye to the middle of the superior lip. With the periosteotome, the edges of the wound are separated from the underlying tissues. The nasal notch is resected from the nasal process of the superior maxillary bone and from the nasal bone. The nasal fossa is opened after incision of the mucosa. If one is cramped for space, the turbinated bones can be resected, also the internal wall of the maxillary sinus. The tumor is extirpated. The fibroma is seized with forceps, and the operator twists and pulls. Hæmorrhage is controlled by compression or by the thermo-cautery.

Peugniez and Labouré state that the operation by Moure is the operation of choice for malignant tumors of the nasal fossa, but for tumors of the nasal pharynx, the Faure operation. Faure is contented with resecting the lower lateral portion of the nasal notch, removing the internal wall of the sinus and, if necessary, a part of the posterior portion of the nasal septum.

G. LAURENS.

**Haskin: The Relief of Nasal Obstruction by Orthodontia: a Plea for Early Recognition and Correction of Faulty Maxillary Development.** *Laryngoscope*, 1912, xxii, 1327.

By Surg., Gynec. & Obst.

The author urges that physicians watch for mouth breathing in all children from birth. The loss of the moulding effect of the tongue and facial muscles is a great one and hard to restore. As a result, the devel-

opment of the whole face suffers. He calls special attention to orthodontic measures in removing the cause of mouth breathing. If, after the removal of adenoids, the patient remains a mouth breather, the nasal space is too small. The nasal septum in these cases is found to be bowed. The usual operation has been the straightening of the septum and removal of a part of the turbinate body. The author recommends rapid spreading of the suture of the upper maxilla. It should be done early, even before the eruption of the permanent incisors, which usually occurs between the seventh and eighth years. Besides giving greater nasal space, it prevents the impaction of the permanent teeth and better occlusion results. The arch is expanded anteriorly and laterally, making use of the deciduous teeth. The mechanism resulting from rapid spreading of the maxilla is as follows: The nasal septum straightens, at least in young children. Thus is due to the actual separation of the suture which allows the resiliency of the septum to force itself down into the space thus made. The lengthening of the suture allows room for the vomer to extend forward to its full length as planned for that particular skull, thus overcoming the anteroposterior vertical bowing that is observed in so many cases.

When the straightening does take place the septum, which is thus forced into the fissure created by the separation, helps to fill in the space and to maintain the expansion. There is no tilting of the arch or the teeth themselves, as the pressure is so applied as to move the arch en masse. After separation there is little change in the direction of the divided surfaces. Accompanying X-ray photographs clearly illustrate the separation of the suture. Whether there is actual lowering of the arch is a mooted question. There may be no actual lowering at the time of separation, but the normal development of the whole face as a result of the restoration of nasal breathing and the freeing of dental impactions, especially if done early in life, will eventually bring about an actual lowering of the roof because of the downward growth of the whole face. The internasal space is widened from 3 to 6 mm. The author presents a theory as to one other causal factor in nasal obstruction. The vomer as planned for the skull, in growing downward and forward, tries to grow to its full length, but the anterior position has to articulate with a much shorter line than intended by nature, and in pushing itself forward becomes bowed vertically. The lengthening of the arch by rapid spreading gives room for the vomer to lengthen and straighten out the vertical bowing. Dentists have noted marked improvement in the general health of patients after rapid spreading, but have not accounted for it on



the basis of greater nasal space. If adenoids are present, these should also be removed as is usual. The author reports six cases which have been watched by him for a number of years.

E. L. CORNELL.

**Glogau: Nasal Deformity Corrected by Autoimplantation of the Septal Cartilage.** *N. Y. M. J.*, 1912, xcvi, 955. By Surg., Gynec. & Obst.

In a case of traumatic saddle nose and nasal obstruction due to fracture of the septum the external deformity was corrected by implanting a part of the cartilage removed intranasally while performing a submucous resection of the septum. The cartilage was covered by its perichondrium, from which, by means of a Bier's skin grafting knife, the superficial epithelial layers were removed. Through a small transverse incision the subcutaneous tissue of the deformity was separated along the dorsum of the nose down to the tip. A sharp spoon was then introduced into this pocket and the cartilage at the tip of the nose curetted; the cartilage, covered by its perichondrium, was then inserted and the incision closed. The inserted cartilage became permanently attached and the external deformity was corrected. By the submucous resection, nasal breathing was restored to normal. The operation was performed under local anaesthesia. The author's method is described in detail.

**Wildenberg: Two Cases of Laryngo-Pharyngeal Oesophagectomy** (Deux cas de laryngo-pharyngo-oesophagectomie). *Ann. d. Soc. d. Méd. d'Anvers*, 1912, lxxiv, 133. By Journal de Chirurgie.

The author presents two male patients operated upon — one recently, the other two years ago — for laryngo-pharyngo-oesophageal cancer, by a method which he had devised and which is executed in the following way. The operation is practiced under chloroform anaesthesia and in one step. Median cutaneous incision extending from the hyoid bone to the superior sternal notch. Then a double transverse incision extending from one sterno-cleido-mastoid to the other at the lower level of the median incision. Removal on the right side of a glandular mass extending into the pharyngo-maxillary fossa. The tumor was intimately adherent above to the external carotid and the jugular vein; below to the tenth nerve. It was difficult to avoid injuring the contiguous organs. After mobilization of the larynx and the pharynx and exposure of the lower limit of the tumor involving the oesophagus as far as the posterior mediastinum, a compress was placed in the mediastinum. The thyrohyoid membrane was incised. The pharynx was divided 2 cm. above the tumor. The larynx and pharynx were detached from the vertebral column, and the oesophagus isolated from the trachea. The trachea was divided at the level of the second tracheal ring and fixed to the skin by means of sutures forming a tracheal stoma. The oesophagus was divided and sutured to the skin for some distance so as to form an oesophageal stoma

above the trachea. The day after the operation the patient ceased to cough, felt comfortable, and was hungry. He was fed by the aid of an oesophageal bougie. Fifteen days after the operation he was fed by Glück's funnel-tube method. This method does not differ from natural feeding. The patient can masticate, taste, insalivate and swallow his food as in the normal state.

One should wait six months before creating a new pharynx and oesophagus. This period is essential to allow the skin to recover its vitality and to detect recurrence. A recurrence renders useless attempts at reconstruction of the pharynx; illustrations accompany the article. The pharynx will have as a posterior wall skin placed upon the vertebral column. The pharynx and oesophagus will be cutaneous. The patient can dispense with his tracheal cannula. With a collar the infirmity can be concealed. As to speech, if the patients are young, they can with sufficient application succeed in securing intelligent speech, with a voice which at times resembles the natural voice. One patient, a man 71 years old, operated upon two years ago, is well and shows no signs of recurrence.

J. DUMONT.

**Hofmann: Transverse Superhyoid Pharyngotomy.** *Beitr. z. klin. Chir.*, 1912, lxxxi, Nov.

By Surg., Gynec. & Obst.

This operation, which has been but little used, was first performed by Von Hacker in 1904, for the removal of a sarcoma at the base of the tongue. Hofmann reports 2 cases in which he was enabled by this means to remove a tumor of the nasopharynx. The first case was that of a young man of 17 years in whom nasal respiration was completely suppressed by a malignant tumor of the nasopharynx. Pharyngeal palpation showed that the tumor filled the vault of the pharynx. Hofmann made an incision 12 cm. long, parallel to and a finger's breadth above the hyoid bone. He then cut through the myohyoid, geniohyoid and genioglossal muscles, removed the submaxillary glands, which were enlarged, and pushed aside the hypoglossal nerves. He was thus able to enter the pharynx without producing hæmorrhage into the interior. Anaesthesia was now continued by a laryngeal cannula. With deep retractors excellent access was thus obtained to the nasopharynx. Unfortunately, the tumor was too far advanced to allow complete removal. The pharyngotomy incision was closed with drainage only at the two ends. The wound healed perfectly. Death followed two months later, as the result of local recurrence.

In the second case in a boy of 12 years, a large, double-lobed tumor completely filled the vault of the pharynx. The same operation as that described above gave very good access to the tumor, which was removed while in plain view. Hæmostasis by semicautey and sponge compression was very much facilitated. Complete closure of the operative wound followed. Although the operation was performed two years ago, there has been no recurrence.



Hofmann concludes that this operation gives an excellent exposure, not only of the base of the tongue and the larynx, but also of the nasopharyngeal vault.

M. C. PINCOFFS.

**Gault: Four Cases of Pharyngeal Tumors Removed by the Buccal Route** (Quatre cas de tumeurs du pharynx opérées par la voie buccale). *Arch. intern. d. Laryn., d'Otol. e. d. Rhinol.*, 1912, xxxiv, No. 2. By Journal de Chirurgie.

The first patient, 58 years old, had a non-mobile cherry-sized tumor. It was not definitely limited. It seemed to form part of the posterior surface of the soft palate. No enlarged lymphatic glands. Total removal of the left half of the soft palate. Suture of the velum palate to opposite posterior pillar. Two years after, no recurrence. No histologic examination.

The second patient, 73 years old, had a vegetating ulcer having the appearance of an epithelioma and occupying the margin and posterior part of the soft palate as well as the anterior pillar. No enlarged lymphatic glands. Total excision of the right half of the soft palate and of the anterior fascial pillar. Two years after, no recurrence. No histologic examination.

The third patient, 33 years old, had a whitish hard walnut-sized tumor occupying the entire right tonsillar fossa. Histological examination showed lymphosarcoma. No enlarged lymphatic glands. Vertical incision upon the anterior pillar. Enucleation with scissors. Four months after, recurrence; new excision; 18 months after, no recurrence.

The fourth patient, 50 years old, had a tumor of the right lateral pharyngeal wall involving the pillars, soft palate, tonsil and base of the tongue. The tumor was mobile, there were no enlarged lymphatic glands. Ablation by the buccal route of all the involved region. No histological examination.

GEORGES LAURENS.

**Tousey: X-ray Measurement of the Permanent Teeth Before Eruption to Provide for Early Regulation of the Dental Arch.** *Laryngoscope*, 1912, xxii, 1300. By Surg., Gynec. & Obst.

In making such an examination, the actual width of the temporary incisors is measured with a caliper square graduated in hundredths of an inch. A wax impression is made, showing the curve formed by the cutting edge of the incisors, the cusp of the canine, and the buccal cusps of the molars. Radiographs are made from which the width of the unerupted central incisors is measured.

The curve that should be formed by permanent teeth of that size is calculated by an established mathematical formula and is drawn in its actual size for the guidance of the orthodontist. Measurements of various cases extending over seven years show: 1. The size of the temporary teeth bears no relation to that of the permanent teeth, and the fact that the temporary teeth form a beautiful arch is no evidence that this is the right curve for the

permanent teeth. 2. Unaided nature reproduces in the permanent arch the curve formed by the temporary teeth, whether right or wrong. 3. If the curve is too small for the permanent teeth, the latter are delayed in eruption or their eruption is entirely prevented. They come through in bad position, causing disfigurement, neuralgic pain, and a variety of nervous symptoms, together with all the bad effects of too narrow and hence too vaulted an arch, crumpling up the nasal septum into deviations and spurs. These last conditions occlude the nasal passages, and produce mouth breathing and adenoid and tonsillar disease. 4. These X-ray measurements made of the permanent teeth at the age of 5 or 6 years have in the cases of seven children been compared with the actual measurements five or six years later and found to be exact within  $\frac{1}{16}$  inch. 5. Regulation of the temporary teeth to the proper curvature is an easy matter for the orthodontist, and is not painful for the child.

**Ketchum: Treatment by the Orthodontist Supplementing that by the Rhinologist.** *Laryngoscope*, 1912, xxii, 1286. By Surg., Gynec. & Obst.

The essayist, after explaining the effect of adenoid tissue and consequent mouth breathing upon the growth of the maxillary bones, the mandible, and the involved muscles, says: "The evidence which is forced upon the orthodontist is that while the adenoid operation is quite necessary, it alone is not often a cure for mouth breathing, except in younger patients where the cause has been operative but a short time and has not caused malformation of the bones and abnormal development of the muscles involved."

He divides the cases of persistent mouth breathing, after adenoid operations, into two classes. First, those in which there is ample nasal space after the removal of adenoids but in which the protrusion of the upper anterior teeth and the retrusion of the lower teeth make it impossible for the patient to close the lips. By placing the teeth in normal occlusion the orthodontist makes possible the closure of the lips. Second, those cases in which there has been an arrest of development of the maxillary bones with a narrow dental arch, narrow nose cavity, deflected septum, etc. Through gentle pressure applied to the teeth in such a way as to transmit the stimulation to the maxillary bones, the maxillary dental arch may be widened to normal size and the involved bones stimulated in development so that the nose cavity may increase in size. Deflected septums often straighten; normal breathing is often the result. The essayist used for illustration such a case in which the nose cavity developed from about one half normal size to three fourths normal, in nine months' time; the deflected septum became nearly straight. Three years after orthodontic treatment examination showed the nose cavity to be fully normal and the septum straight.

The essayist also says: "The orthodontist cannot



hope for permanent success in a case where mouth breathing has caused malocclusion of the teeth unless the rhinologist remove the primary cause of the mouth breathing.

"To be of the greatest benefit to humanity, the rhinologist and orthodontist must work together, for the work of one often supplements that of the other."

**Brown: The Speech Relation of Cleft Palate Operation.** *J. Am. M. Ass.*, 1912, li, 1440.

By Surg., Gynec. & Obst.

The surgical closure of cleft palate cannot be expected to overcome speech defects, the underlying cause of which is some factor other than those which concern the psychologic action of the parts influenced by the anatomical defects.

In the correction of speech defects by post-operative speech training, the improvement will be accelerated in proportion as the result of our surgical operations in both uranoplasty and staphylorrhaphy more nearly approximate the normal in the reproduction of bone and soft tissue in the palatal region. With this end in view the author conducted a series of experiments upon dogs at the Parke-Davis Laboratory for Pathologic Research, assisted by Dr. N. S. Ferry of that laboratory, and endeavored to ascertain exactly what measure of normal development might be secured by the methods of urano-staphylorrhaphy that are chiefly employed.

The palates of a series of pups two months old were compressed and fixed in this position with wires passed above the palate and clamped upon each side of the upper jaw, after the form of operation recommended for young infants by Garretson and Brophy. Sections through the heads of pups at approximately six months old showed almost complete nasal stenosis, deflected nasal septum, greatly enlarged maxillary sinuses, marked disarrangement in the occlusion of the teeth. They developed a high degree of susceptibility to infection, and were more or less affected by nasal or pneumonic disease. Nervous and trophic changes seemed to be so interfered with that they were only half as large as the control pup of the same age. This was exactly in accordance with the deformed mouths, noses, and faces that may be seen in children and young persons who have the palates closed in early infancy by direct compression according to this method. The best results in health, speech, and personal appearance are impossible for individuals so treated.

Fissures were cut in the palates of pups, and these were closed according to the following methods: In some, flaps were inverted by making incisions along the alveolar border on one side, raising the mucoperiosteal border from the external border toward the center, reversing it, sliding the border under a mucoperiosteal flap raised by separation along the border of the fissure on the opposite side and sutured in this position to follow the methods of Lane and Ferguson. In others, the fissures were

closed by freeing the anterior end of a mucoperiosteal flap with a broad posterior pedicle, reversing and suturing it under a flap similarly raised upon the opposite side, which was left with the mucous membrane in its normal position and sutured as in the Davies-Colley operation. There was no evidence whatever of bone reconstruction in any of these pups. It therefore seems reasonable to conclude that this type of operation is objectionable, because through the disturbance of the natural anatomical arrangement of the tissues, occasioned by turning the periosteum upside-down, bone growth does not take place as it might if the periosteal surfaces were merely moved across and brought together in their natural position. The thickened fibrous tissue which forms across the fissure cannot have the firm resounding properties of a bony palate, nor will it have the fixed resistance to the attachments of the muscles which is necessary for proper speech function.

The palates of pups closed by a modification of the well known Van Langenbeck operation — with the mucoperiosteum raised from the border of the fissure, incisions in line with the teeth upon each side, flaps raised and sutured in the center by sliding them across the bone surface without altering the normal relation of the mucous membrane and the periosteum — seem to show conditions that were favorable to bone growth across the palate fissure.

Clinical experience and the skiagraphs of the mouths of patients whose fissures he had closed in the region of the hard palate several years previously indicate that bone does form in this region when the palate tissues are treated in this way.

The conclusions based upon the results thus far accomplished in these experiments are summarized as follows:

1. The application of compressive force sufficient to cause traumatic injury or disarrangement of the developing teeth or surrounding jaw structures, or the application of clamps of any kind which may inhibit growth across the palate in infant harelip and cleft palate cases, is unnecessary even in the most difficult types of these affections, and cannot fail to do permanent harm to the future development of the nose, palate, teeth, jaws, face, and pharynx, and thus militate against the acquirement of correct speech.

2. Expedients such as the carrying in of external tissue from the lip or skin, or the turning upside-down of the mucoperiosteum for the purpose of bridging the palate fissure, are not required, because the same results can be accomplished otherwise in practically all cases, and the resulting scar tissue formation with loss of bone development renders the best speech results impossible.

3. Notwithstanding such unavoidable disadvantages and difficulties as may be encountered, the effort from first to last in the treatment of all cases of harelip and cleft palate should be to restore the parts in such manner that in every possible way the normal growth and development may be favored.



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## SURGERY OF THE EXTREMITIES

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X-ray measurement of the permanent teeth before eruption to provide for early regulation of the dental arch. S. TOUSEY. *Laryngoscope*, 1912, xxii, 1300. [217]

Treatment by the orthodontist supplementing that by the rhinologist. A. H. KETCHUM. *Laryngoscope*, 1912, xxii, 1286. [217]

The speech relation of cleft palate operation. GEO. V. I. BROWN. *J. Am. M. Ass.*, 1912, li, 1440. [218]



# INTERNATIONAL ABSTRACT OF SURGERY

APRIL, 1913

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### OPERATIVE SURGERY AND TECHNIQUE

**Trout: Proctoclysis: Experimental Study.** *Trans. South. Surg. & Gynec. Ass., Dec., 1912.*  
By Surg., Gynec. & Obst.

In February, 1912, Trout had presented a preliminary report of a comparative study of saline solution and tap water for proctoclysis in nearly 1000 cases. The present report, which he presented before the December meeting, was based on over 2000 cases, and included all types of operations, as well as replies received from 232 hospitals, with the following deductions:

(1) There is no uniformity in preparing saline solutions in the various hospitals; (2) a soft rubber catheter is employed instead of a hard nozzle, and very seldom does the patient realize anything is in the rectum; (3) all sodium salts are toxic, and quite frequently dangerous doses are being given by the rectum; (4) tap water does not irritate the rectum, and patients will absorb one third more than they will of salt solution; (5) it requires twice as much water by mouth to relieve thirst when patients are taking salt solution by rectum; (6) salt solution does not seem to have any effect on the renal functional test of phenolsulphophthalein; (7) 27 cases have tasted salt without knowing the character of the solution they were taking by rectum; (8) 58 cases have been operated on at other hospitals, and all have commented on the absence of thirst and decrease in nausea in comparison with previous operations; (9) 287 operations on the perineum and rectum in which proctoclysis could not be employed have been in the hospital during this period, and all showed a marked increase in thirst and nausea in comparison with other cases; (10) 4 cases of death are reported in the literature from the use of salt solution; (11) the giving of fluid by rectum meets nature's demands for the relief of post-operative thirst in a simple, effective and harmless manner.

The following experiences and opinions were given in discussing Trout's paper:

Jonas had been changing from saline solution in the rectum to plain water proctoclysis, and although he could not give the exact statistics, he could confirm the very favorable report of the essayist. Patients had been much more comfortable. Edema of the legs had been observed less frequently.

McRae knew of a case in which a stronger salt solution was used instead of the usual dilute salt solution, and death supervened twelve hours later. It was a simple appendectomy, where the nurse used a pint of the stronger solution.

Parham had for some time been using very much weaker solution, namely 0.1 per cent solution, in place of the ordinary normal salt solution, but had not done it as systematically as the essayist, who had brought out clearly the advantages of using water in place of salt solution in most of these cases.

Milne, of London, said it would be interesting to know the temperature of the tap water in the receptacle. At the London Hospital they gave salt solution as a routine for years, and in the receptacle the temperature of it was 105°, until some one found that when the saline solution came out of the end of the catheter its temperature was only about 90°; that is, in running through a rubber tube three or four feet long the saline solution drops about 15 or 20 degrees in temperature. Since then they usually kept it in a thermo-flask at the foot of the bed, at a temperature of 120°.

Elbrecht was of the opinion that if one would take a tube six feet long, which was about the average length of the tube which would be used for proctoclysis work, he would find there was a drop of 40° in temperature in the six feet of rubber tubing, with the water running at the rate of 60 drops per minute. This he simply used as a standard to gauge how much salt solution would run in in an hour.



Carr had always been rather afraid of salt solution, especially used intravenously and subcutaneously; he did not think he had given it intravenously in half-a-dozen cases, and he seldom used it under the skin. He was glad to hear of such gratifying results from the use of plain tap water.

In conclusion, Trout said he had been able, except in a few cases, to get nine quarts of salt solution in the rectum. He had found drainage cases absorbed more than any other class of cases. He used 3500 to 4000 cc. in water cases, and from 2500 to 3000 cc. in salt solution. He gave it every two or three hours by catheter,—would let it run in and then take out the catheter. E. S. TALBOT, JR.

### ASEPTIC AND ANTISEPTIC SURGERY

**Hoffmann: The Rapid Disinfection of the Mucosa at Operations During Which the Gastro-intestinal Tract is Opened** (Zur Schnelldisinfektion der Schleimhaut bei Operationen mit Eröffnung des Magendarmtractus). *Beit. s. klin. Chir.*, 1912, lxxx, No. 3. By Surg., Gynec. & Obst.

There is always more or less danger of infecting the peritoneal cavity in those cases where it becomes necessary to open into the lumen of the stomach or bowel. The attempt to render the gastro-intestinal canal aseptic by the administration of intestinal antiseptics has proven an utter failure and has been abandoned. Notwithstanding the strict observance of technical detail as to cleanliness, dexterity and gentleness, there will be cases from time to time in which some degree of local infection has followed the opening of any of the hollow viscera.

Encouraged by his success with thymol-alcohol in disinfection of the skin, Hoffmann determined to try the effects of this powerful germicide on mucous membranes. Experiments were made on dogs by opening the intestine and making cultures from the mucosa. Then the mucous membrane was treated for one minute by applying a pledget of gauze saturated with a 5 per cent solution of thymol in alcohol. Cultures were then taken from the mucous membrane, immediately and for fifteen minutes afterward, and all remained sterile. The mucous membrane was then excised and subjected to a histological examination, which revealed no change whatever in the tissues. Then, in order to determine whether a longer application of the solution would be detrimental to the mucous membrane, the application was continued for from five to fifteen minutes. In these cases necrosis of the membrane followed, showing that an application lasting longer than one or two minutes was not safe.

Hoffmann concludes, as the result of his experiments, that 5 per cent thymol-alcohol when applied to mucous membranes for one minute is a safe and efficient disinfectant. He cautions against allowing the solution to come in contact with the peritoneum. This solution is applicable not alone in intestinal work, but has been found to be a very efficient disinfectant of the vagina. WILLIAM HESSERT.

### ANÆSTHETICS

**Eisenbrey: Observations on the Use of Intratracheal Anæsthesia in Experimental Work; with a Description of a Simple and Inexpensive Apparatus.** *Surg., Gynec. & Obst.*, 1912, xv, 715. By Surg., Gynec. & Obst.

The writer gives a detailed description of an apparatus of his own design for intratracheal anæsthesia which combines simplicity, small cost, and ease of construction, and the essential features of which are a constant air supply, a means of diverting, by the use of the rocker valve principle, all or any portion of the air through an ether container, and a tube for conducting the mixed air and ether into the trachea.

Several practical points in intratracheal insufflation and in the use of this apparatus are ably discussed. Warming the air is thought to be of advantage in aiding vaporization of the ether, although the air loses its heat as it passes through the delivery tube to the tracheal catheter. The danger of overanæsthetization if the air is allowed to bubble through the ether is pointed out, together with the efficiency of the artificial respiration provided by reversing the lever. The recession of the ether by evaporation, thus decreasing the amount of anæsthetic the patient receives while still supplying his lessening needs as the duration of the anæsthesia lengthens, is remarked upon. The question of the percentage of ether given is disposed of, and the technique of the introduction of the catheter is described.

At what pressure the apparatus should be operated is discussed, and it is shown that the pressure to which the lungs are subjected cannot be judged by the mercury manometer, as it is dependent on the amount of space between the catheter and the trachea. The choice of the proper sized catheter with which to distend the lungs to the proper degree is difficult, but a small one is best, as the outflow can always be lessened by digital compression of the trachea. The prevention of overdistention in both clinical and experimental cases is also taken up.

Finally, it was found that raising the intratracheal pressure to 8 or 10 mm. resulted in a condition of apnœa or pseudapnœa which in the author's opinion was not an acapnœa due to CO<sub>2</sub> exhaustion, because its appearance was simultaneous with the rise of intratracheal pressure and not the result of a previous overventilation. It is accompanied by full distention of the lungs, which interferes with access to the viscera, and by a serious fall in blood pressure, of from 20 to 40 mm. This phase of the question will be dealt with in a later paper. E. K. ARMSTRONG.

**Collier: Improved Technique of Ether Vapor and Nitrous Oxide-Oxygen Anæsthesias.** *J. M. Ass. G.*, 1912, ii, Dec. By Surg., Gynec. & Obst.

The author goes into detail in describing the apparatus he uses in both the ether vapor and nitrous oxide-oxygen anæsthesias. Special attention is called to the warming device of each.



In the ether vapor apparatus the air, mixed with ether or chloroform, or both, in varying proportions by a regulating index plate, is forced to the patient through the warming chamber by a compression bulb or foot pump just in advance of each inhalation. This gives a regular narcosis with a minimum amount of the anæsthetic, producing less nausea and kidney and liver derangements, and causing little or none of the respiratory irritations frequently seen in the ordinary methods now in use.

The author finds the warming chamber in connection with his nitrous oxide-oxygen apparatus quite an advantage, as the warmed gases are much more readily taken up by the blood than cold and are less chilling to the mucous membranes of the respiratory tract. In all septic and toxic cases, where the patient needs all his phagocytes, the author knows of no other anæsthetic that equals or even approaches nitrous oxide-oxygen. His experience has shown such a marked difference in the immediate and remote after effects on the patient that, to his mind, gas-oxygen is the anæsthetic of choice in all such cases. Patients begin to improve immediately, provided, of course, they are not already surcharged with toxins.

The average length of the author's 194 true nitrous oxide-oxygen anesthesias to date was 37½ minutes. In 17 other cases, with an average duration of one hour and fifteen minutes, he found it necessary to supplement the gas-oxygen with ether in order to get complete muscular relaxation, only requiring, however, an average of 7½ dr. of ether for each case, showing profound anæsthesia of ten minutes for each dram of ether so employed. He urges the more general use of the nitrous oxide anæsthesia, especially in all cases of septic and toxic nature.

**Ambard and De Martel: Prolonged Anæsthesia with Nitrous Oxide** (Anesthésie prolongée par le protoxyde d'azote). *Compt.-rend. Soc. de Biol., Par.*, 1912, xxiii, 652. By *Journal de Chirurgie*.

To obtain an anæsthesia of long duration it is necessary to add oxygen to the nitrous oxide, because the latter will not assure hæmatosis. As the mixture of oxygen and nitrous oxide produces little anæsthesia, some asphyxia is necessarily used (2 to 3 per cent only of oxygen up to 9 to 10 per cent). Two other methods may be used which prevent bordering too greatly on asphyxia. One, the method of P. Bert, consists of the administration of the anæsthetizing mixture in a chamber under pressure. The other, inaugurated by Neu in 1901, consists in preceding the anæsthetic by an injection of scopolamin.

The authors report ten anesthesias under pressure and five under scopolamin with nitrous oxide and air. These anæsthetics under pressure were given from an apparatus by M. Gauthier with a pressure of 30 to 40 cm. of mercury and a gaseous mixture of seven parts nitrous oxide and one part oxygen. The average duration of anæsthesia was

about half an hour, although two of them were almost an hour.

Anæsthesia by nitrous oxide under pressure is rapid and without the period of excitation. Awakening is rapid and without malaise or vomiting. This is the ideal anæsthetic for the patient as well as for the operator. It will be of great service to those patients who take chloroform poorly.

In their five anesthesias by Neu's method the authors injected 1 mg. of scopolamin and 1 cg. of morphin half an hour before the anæsthetic. They put the patient to sleep with 10 parts nitrous oxide and 1 part oxygen. Sleep was profound, asphyxia was light, and the awakening prompt (5 to 6 minutes), but the patients were apathetic for seven hours. Once they observed vomiting.

The authors think the method of Bert is of the first order, from the point of view of harmlessness, its relative complexity being the only objection.

PIERRE CRUET.

**Rood: Regional Anæsthesia.** *Brit. M. J.*, 1912, ii, 1701. By *Surg., Gynec. & Obst.*

Regional anæsthesia can be used for any type of operation, upon any part of the body supplied by nerves which are at some part of their course anatomically accessible. By anatomically accessible is meant such a position of the nerve that it is possible to pass a fine needle down to it, and so introduce a strong solution of the analgesic fluid. The musculo-spiral nerve in the arm and the median nerve at the wrist are both cases in point. The characteristics of this form of anæsthesia are:

1. Granted that a suitable anæsthetic solution is introduced around the trunk of a nerve, the whole area supplied by that nerve becomes anæsthetic—bone, muscle, fascia, skin, etc.

2. The method can be used for operations upon inflamed tissues provided the injection around the nerve trunk be made at some point well above the septic area.

3. The anatomical relations of the part to be operated upon are not obscured by œdema caused by a large quantity of injected fluid, as is sometimes the case with the wide infiltration method.

4. The anæsthesia lasts for several hours.

5. The anæsthetic area is clearly defined by the anatomical distribution of the nerves. Consequently there is no risk of suddenly overstepping the limits of the anæsthesia, with most unpleasant results to the patient.

A very important factor in the success of this form of anæsthesia is the solution used. Either eucaïn, stovain, or novocain may be employed, but the author reports the best results from novocain. A 2½ per cent solution of novocain in distilled water is prepared, and sufficient sodium chloride is added to make the fluid isotonic with the blood. The whole is then sterilized by boiling, which can be done without detriment to the novocain; it is, of course, absolutely necessary that this fluid should be sterile, and for this reason it should be freshly prepared for



each case shortly before using. The formula of the solution is: Novocain, 2 gr., sodium chloride, 0.5 gr., distilled water, 100 cc. Five drops of a 1:10,000 solution of adrenalin are added to each 20 cc. of solution immediately before use.

The author reports 254 cases in which this method was employed: 150 operations on the hand, 17 on the wrist and forearm, 1 on the arm, 43 on the thorax, 6 in the abdomen, and 37 on the foot. In only 7 of these was general anæsthesia needed to complete the operation. On the whole the anæsthesia was very satisfactory. Two things determine the success — anatomy and novocain.

M. S. HENDERSON.

### SURGICAL INSTRUMENTS AND APPARATUS

**Dams: A New Apparatus for Pressure in Narcosis** (À propos du principe de Brauer. Un nouvel appareil à baronarcose). *Ann. d. l. Soc. belge d. Chir.*, 1912, xii, 494. By Journal de Chirurgie.

The principle of the apparatus for hyperpressure in surgery of the thorax seems unanimously admitted to be substantial. However, the apparatus used is not popular, and the author believes this to be due

to the fact that it is too cumbersome and bulky. He therefore constructed a compact and practical instrument which could be used without question and without preliminary experience. The principal difficulty in the pressure narcosis apparatus is the necessity of introducing the anæsthetic beforehand into a medium of compressed air. In order to introduce the liquid into a closed tube of compressed gas without letting the latter escape, the author employed an asbestos wick which traversed the wall of the tube and which absorbed the volatile liquid as it was needed. This apparatus is based upon the principle of capillary attraction. Its weight does not exceed 155 gm., and its dimensions are small enough to permit its introduction into an ordinary instrument case. The technique for the use of the new instrument is very simple.

The mouthpiece is an elliptical plate of thin elastic metal curved to conform to the shape of a dental arch. It is designed to be placed within the lips, between them and the teeth, and contains a rectangular tube in which the tambour slides with a great amount of friction. The tambour is a small metallic cylinder, divided into two chambers by a septum parallel to its bases.

L. MAYER.

## SURGERY OF THE HEAD AND NECK

### HEAD

**Davis: A Cheek Defect and Its Repair by Plastic Operation.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912. By Surg., Gynec. & Obst.

The following case was reported by Davis: Male, aged 16. Defect 6.3 cc. in diameter, involving the whole thickness of the right cheek. Probably caused by cancrum oris, which occurred as a typhoid complication two years previously. The surrounding soft parts were infiltrated with scar tissue. The tongue was adherent to the lower border of the defect, and there was inability to open the jaws. To close this defect a flap was necessary which should fulfill several conditions. It should have enough thickness to fill the defect without causing a depressed scar after healing was complete. It should be formed of tissue which would conform in appearance to the surrounding skin externally, and take the place of the mucous membrane of the mouth. A rectangular flap 7.5 x 16 cm., of whole thickness of skin and subcutaneous fat, was raised from the right arm. The pedicle was in the mid-deltoid region. The flap was folded on itself, and the distal end sutured to the pedicle and underlying muscle, thus bringing raw surface to raw surface and forming a flap with fat within, and the whole thickness of the skin on front and back. This was held flat on a wire frame. Two weeks later the tongue was freed, the arm was raised and the flap was sutured into the upper two thirds of the defect. The arm was held in position by a plaster cast. The pedicle

was amputated after eleven days, and eleven days later the remainder of the opening was completely closed. Several attempts were made to relieve the fibrous ankylosis of the jaws, but without success.

By this method of treatment the defect was filled by a pad of tissue with the whole thickness of the skin on both sides. The circulation of the flap was assured before transplantation was begun. Most of the shrinkage had taken place before it was transplanted. There was no unsightly scarring of the cheek or neck. The area from which the flap was secured was healed by Thiersch grafts by the time the flap was ready for transplantation. On the whole, the result was very satisfactory.

E. S. TALBOT, JR.

**Vance: Head Injuries.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912. By Surg., Gynec. & Obst.

Eight cases were reported by Vance, which may be summarized as follows:

**CASE 1.** Twelve years before operation patient was struck on the head with a shovel, followed by development of epilepsy. Operation, at the site of injury, consisted of the removal of a good-sized button, and resulted in complete recovery. There were no further epileptic seizures. The patient died of pneumonia ten years later.

**CASE 2.** Patient, 45 years old, became paralyzed two days before operation, and gradually lapsed into complete coma and developed paralysis, beginning on the left side and extending to the whole body, including the face. Sensation on the left side



was entirely absent and greatly diminished on the right. Bowels and bladder paralyzed; eye reflexes absent. Operation: Upon shaving the scalp the head showed a curious condition. The whole scalp was oedematous, and the right half presented the appearance of angioma, the veins were so greatly dilated. A piece of bone the size of a ten-cent piece was removed, and the opening then enlarged to the size of a half-dollar. The dura was incised, the brain explored with suction needle, and one half ounce of fluid obtained. Wound was closed without drainage. Complete recovery. This condition resembled very much what is designated by two or three authors as "wet brain."

CASE 3. Boy, aged 10; head injured in street car accident. Scalp torn from both sides of the skull; loss of the parietal bone. Scalp cleansed, parts adjusted, and separate dressings applied. Twelve days later, with the patient in good condition, another doctor was called to soak the dressing off, which the author declined to do. The uncovered meninges became infected, and the boy died three days later.

CASE 4. Injury of the skull in the right parietal region, patient being struck on the head by a baseball. Decompression operation nine weeks later, with removal of a good-sized button. Complete recovery, with no recollection of the accident by the patient.

CASE 5. Boy, aged 10, sustained extensive compound fracture of the skull. The mastoid region and the area back of and above the ear were crushed. Operation consisted of removal of several pieces of bone, the scalp being sutured without drainage. Complete recovery.

CASE 6. Epilepsy, with loss of speech and power of locomotion, following an injury to the head. Examination revealed depression over the left brow and temporal region. Operation consisted of removal of a large piece of bone without subsequent drainage, followed by complete recovery.

CASE 7. Pistol wound at the junction of the frontal with the parietal bone, large enough to admit one's thumb. Operation consisted of removal of fracture with some brain matter, as well as fragments of bullet. Followed by complete recovery.

CASE 8. Pistol wound through the roof of the mouth, a little anterior to the junction of the soft with the hard palates, the bullet going entirely through the brain. No operative measures were carried out at this time. Mouth sprayed with antiseptic fluids and liquid nourishment given. At the end of six weeks the bullet was removed, together with several pieces of the skull. This was followed by complete recovery.

E. S. TALBOT, JR.

**McGuire: A New Operation for Decompression.**  
*N. Y. M. J.*, 1912, xcvi, 1265.

By Surg., Gynec. & Obst.

The cause of the advancement in abdominal surgery has been the study of pathology in the living, and that the reverse is true of cranial surgery is

due to the lack of that study. This can be accomplished only through large openings, and these should always be used in all explorations.

Accurate studies of final results of brain operations are very discouraging. In a review by Taylor, of Philadelphia, of 63 cases, all are dead save five, and only two of these have reached the three-year limit.

Present methods of decompression are entirely inadequate. In the subtemporal operation the relief of pressure is not sufficient; as is proven in cases where great pressure is known to be present, such as in extensive fracture of the base of the skull. The old methods for relief of pressure depend for success upon the development of a hernia rather than upon the enlargement of the cranial cavity. In any operation for decompression where displacement of brain occurs, it must be in the direction where paralysis is impossible.

An incision is made from the mastoid to the crown of the head, and around to the mastoid on the opposite side. A bone flap is made of corresponding size, the base of which is on a line with the transverse sinus. Great care must be exercised in crossing the longitudinal sinus, also before breaking the flaps of bone, to thoroughly separate the sinus from the flap. If the tension be above the tentorium the dura can now be opened. If not, the transverse sinus is easily separated with a blunt instrument, and with gentle pressure the cerebellum retracts so that an incision can be made in the dura, over either or both lobes. In this way pressure can be relieved, whether the growth is above or below the tentorium, or whether it be on the right or the left side. The bone flap is replaced and held by two wire sutures, after the method of Hudson. The advantages claimed for this operation are:

1. Exploration and decompression are combined in one operation.
2. Relief of pressure, wherever the tumor be located.
3. Absence of paralysis.
4. Decompression is elastic, changing as pressure increases.

**Pussep: Operative Treatment of Hydrocephalus Internus in Children** (Operative Behandlung des Hydrocephalus Internus bei Kindern). *Arch. f. Kinderheilk.*, 1912, lix, 172.

By Surg., Gynec. & Obst.

This starts with an exhaustive review of the literature on the etiology and treatment of hydrocephalus. Then follows a report of 14 cases of 18 operated, the other 4 cases being eliminated because of insufficient data or other causes. Of these cases 10 were of chronic hydrocephalus, 1 of acute, and 3 of hydrocephalus due to brain tumor. The operation performed was undertaken with the idea of substitution for the aqueduct of Sylvius, since the closure of this canal seems to be the etiologic factor in most cases. A skin and bone flap is made in the occipitoparietal region. A double flap of dura mater is



made. The brain is punctured with a silver trocar down to the hydrocephalus cavity, the end of the trocar is then cut, bent, and fastened into the dura flaps. This allows drainage into the dura and subcutaneously. Of the 10 chronic cases only 1 died. The results here were quite good but depended upon the amount of damage done to the brain tissue. In the acute cases one must be careful. In the case here reported, blindness due to choked disc followed the operation. The result in the other three cases gave all that could be expected.

Pussep regards this operation in many cases as curative, in others as merely palliative. It is technically simple. In chronic hydrocephalus internus it produces some benefit provided the nutrition of the child is good. In acute hydrocephalus from meningitis, if brain compression is great, it not only aids the immediate symptoms but favorably influences the course of the disease.

C. G. GRULEE.

**Sanz: Cerebellar Tumor without Localizing Signs** (Tumeur du cervelet sans symptômes de localisation; autopsie). *Rev. d. med. y cirugía practicas*, 1912, xxxvi, 324. By Journal de Chirurgie.

Sanz reports a case of cerebellar tumor in which all localizing signs were absent. The patient was a farmer, 21 years of age, with a negative past history. He dated his trouble from an accident in September, 1911, at which time he fell a distance of about nine feet, striking upon the right posterior aspect of his head. At the time no serious symptoms manifested themselves. A month later he began to feel pains localized in the right half of the head, and some time later he complained of vertigo, nausea, vomiting, trouble in hearing, and weakness in the limbs, especially on the right side of the body. From time to time he had attacks of diplopia. He was admitted to the clinic on January 13, 1912. At this time he had a convergent strabismus due to the paralysis of the right external rectus. The pupils were dilated and reacted sluggishly to light. There was considerable diminution of visual acuity, especially in the left eye. There was neuro-retinitis in the left eye, and papillary stasis in the right. The auditory apparatus showed no abnormalities. The tendinous and periosteal reflexes in the right arm were increased somewhat above the normal. Treatment with iodides seemed to cause some improvement. Cerebrospinal fluid was apparently normal. While the patient was under observation, a slight tremor of the left upper extremity was once noted, which however disappeared in a few days. There was some difficulty in walking. Visual acuity steadily diminished. On March 22 decompression was done, chiefly as a measure of relief for the severe headache. The patient died on the 24th. Autopsy showed that the lateral ventricles were greatly dilated. A tumor the size of a walnut was found occupying the white substance of the cerebellum and pressing upon the parts anterior to it. The peritoneum showed tuberculous nodules, and some

ascitic fluid. The histological examination of the cerebellar tumor showed that it was a tuberculoma.

SALVA MERCADÉ.

**Kolbe: The Pituitary Gland During Pregnancy and After Castration** (Untersuchungen von Hypophysen bei Schwangerschaft und nach Kastration). *Arch. f. Gynäk.*, 1912, xcvi, No. 3.

By Surg., Gynec. & Obst.

Investigators are now agreed that the anterior lobe is glandular, consisting of epithelial cells, and the posterior is the infundibular or nervous lobe. The former has a connective tissue framework filled with groups of cells of various kinds. The latter cells have various characteristic staining qualities. Flesch divides them into two groups—chromophile and chromophobe. The former group is subdivided into eosinophile and cyanophile cells. The work of Erdheim and Stumme on the hypophyses of men, nullipara and pregnant women shows the gland to be richly supplied with blood-vessels and that the three components, eosinophile, basophile, and main cells, are present in varying proportions according to sex, pregnancy, etc. Thus, in the hypophysis of a man the eosinophiles predominate, especially in the posterior part of the anterior lobe. The basophiles are most abundant in the anterior part of the anterior lobe. The main cell (Hauptzelle) occurs less frequently in males and nullipara. This last named cell has a large, round nucleus, and the protoplasm stains very poorly. During pregnancy an increase in weight and size takes place in the glandular part and slowly recedes after birth. Histologically one finds a great increase in the number of main cells (Schwangerschaftszellen). The basophiles are decreased even for a number of years after delivery. In multipara these phenomena are more pronounced, especially in rapidly succeeding pregnancies.

The work of the author deals with the pineal gland of nulliparae, multiparae and castrated women, of guinea pigs, and of rabbits. Castration causes a cessation of the control over the gland by the ovary; pregnancy causes a hypofunction of the ovary and a specific action of the corpus luteum on the pineal body. In both cases there is an increase in the size of the gland, but during pregnancy the main cells increase in number and their protoplasm becomes stainable, whereas the increase after castration is due to an increase in the number of eosinoplutes. After each successive pregnancy the protoplasm of the main cells becomes more deeply stained.

A colored plate of four figures illustrated the observations of the author. L. W. SAUER.

**Von Eiselsberg: The Removal of Tumors of the Hypophysis.** *Arch. f. klin. Chir.*, 1912, lxxxi, 90.

By Surg., Gynec. & Obst.

Von Eiselsberg reports in detail 16 cases of tumor of the hypophysis operated in his clinic. Among these were 3 males and 13 females, ranging in age from 18 to 53 years. Eight of the cases were of Fröhlich's type (typus adiposo-genitalis), 6 had



symptoms of hyperpituitarism (acromegaly), and 2 were of the combined hypo- and hyperpituitarism type. The most uniform symptoms present were the ocular disturbances, headache, and the excavation of the sella turcica shown by the X-ray picture.

Of the 16 cases operated upon, 4 died. Among the 12 recoveries, there were 7 adenomata of the hypophysis, 1 epithelial tumor, 1 perithelial sarcoma (or carcinoma), 1 angiosarcoma and 2 cysts. The period of observation was 3 months in 3 of the cases, 8 months in another,  $1\frac{1}{4}$  to  $2\frac{1}{2}$  years in 6 cases, and 4 and  $5\frac{1}{2}$  years in 2 cases. The most noticeable benefit in all the cases was the cessation of the headache and the improvement of the vision where optic atrophy had not already occurred. The adiposity was reduced in 2 cases of Fröhlich's type. In one case the menses returned after being absent four years. Three cases of acromegaly were markedly benefited, showing the effect of the reduction in size of the gland. The only damage produced by the operation was the cosmetic result and fœtor ex nasi, which persisted in 3 cases.

The unfavorable results in the 4 cases were due to a foudroyante meningitis following the operation. Three of these cases showed an inoperable basal sarcoma which involved the hypophysis secondarily. Two of the cases had coryza (concealed by one patient) before the operation. Von Eiselsberg warns against operating in the presence of coryza.

The operative indications are chiefly for the relief of headache and the visual disturbance. Slight symptoms of acromegaly, adiposity, or impaired vision without changes in the eye-grounds are not sufficient indications for operation. Von Eiselsberg agrees with Cushing as to the advisability of doing sellar or subtemporal decompression in some cases.

The technique advised by von Eiselsberg is a modified Schlaffer operation. He regards the intracranial route recommended by Horsley, McArthur (temporo-frontal flap) Krause and Borchardt (frontal flap) as too difficult, with the added danger to the optic nerve, the vessels and the brain tissue. The transphenoidal route is to be regarded as the method of choice. Von Eiselsberg makes the following classification: (1) Temporary nasal flap method, the original Schlaffer operation, modified by Hochenegg, Bruns, Kanavel, Mixter, Ollier, Kocher and Chiari; (2) the sublabial incision, recommended by Halsted and Cushing; (3) the endonasal method successfully performed by Hirsch; (4) the palatine method of König, Löwe and Durante; (5) the pharyngeal method after suprahypoid pharyngotomy, as per Malgaigne and others.

Von Eiselsberg gives his technique as follows: Three days before the operation the patient receives 2 gm. urotropin daily. The coagulability of the blood is determined and calcium lactate given if it is delayed. The nose and throat are carefully examined. Anæsthesia with morphin and ether or Billroth's mixture. The operative field is sprayed with  $\frac{1}{2}$  per cent novocain (H. Braun), to stop hæmorrhage. Tamponade is accomplished by Bel-

locque's method. The incision is made along the left naso-labial groove up to the glabella, over the bridge of the nose to the right palpebral fissure. The nasal bone is cut through with hammer and chisel. The philtrum nasi is cut at its juncture with the upper lip. A large portion of the septum and vomer is detached with the nasal flap. The remains of the septum, vomer, rostrum and the turbinates are next removed.

Hæmorrhage is stopped with adrenalin and compression. The sphenoid sinus is now opened, its anterior and inferior walls removed and the cavity scraped out. The hypophyseal tumor is usually exposed at this stage, the dura is incised, and as much of the tumor as is thought advisable is removed with a sharp spoon (excochleation). After stopping the hæmorrhage, a cigarette drain is placed in the defect and fastened by a stitch around the left nostril. No tamponade is necessary. Finally the nasal cavity is cleaned out, Bellocque's tampon is removed, and the nasal flap sutured in its place. The cosmetic results of this operation are usually good. The time required is 1 to  $1\frac{1}{2}$  hours. Patients are left in bed 8 to 10 days in upright position.

The two other operations which von Eiselsberg recommends are Cushing's operation and Hirsch's endonasal method, which requires the services of an expert rhinologist. He recommends his operation because of the simplicity of the technique and the wide exposure of the field of operation, allowing the operator to observe and control each step.

ERWIN P. ZEISLER.

## NECK

**Allen: The Use of Tuberculin in Tubercular Adenitis of the Neck.** *Penn. M. J.*, 1912, xvi, 216.  
By Surg., Gynec. & Obst.

The author finds that the primary source of this infection is usually through the tonsils, adenoids, or decayed teeth. These are removed or cared for in the beginning of the treatment. Caseous glands are allowed to break down spontaneously, and the cavities are lightly curetted. He recommends the injection of Koch's old tuberculin in serial dilution. The injections are given weekly, beginning with two minims of dilution No. 1, and increasing two minims at each injection. Olive oil and milk are used to build up the patient. The results in forty cases show that the glands decrease in size; the patients increase in weight; the general health improves materially; and old sinuses of the neck, as well as the resulting wounds from the spontaneous breaking down of the glands, heal promptly with its use. The treatment must be continued over a period of six to eighteen months.

**Halsted: Vincent's Angina: Its Frequency and the Importance of Its Diagnosis; with Reports of Two Fatal Cases.** *Laryngoscope*, 1912, xxii, 1372.  
By Surg., Gynec. & Obst.

Vincent's angina is the manifestation in the throat and upper respiratory tract of the infective



activity of the fusiform bacillus, associated with spirochaetes and spirilla, the latter probably being but evolutionary forms of the former. These same organisms produce disease in all parts of the body, a pseudomembrane being produced on mucous membranes and abscesses in the deeper parts. Hospital gangrene and noma are due to these organisms, while many cases of phagedenic ulcer of the penis and genitalia and abscesses of the lung and spleen have been reported. A case of appendicitis followed by general pyæmia with multiple abscesses in all parts of the body, due to the fusiform bacillus, has recently been reported by Tunncliffe. Many cases of bronchitis, laryngitis, broncho-pneumonia (the false membrane being the local lesion), and a few cases of mastoiditis, the fusiform bacillus being the pathogenic organisms in all of them, are found in the recent literature.

Vincent's angina, strictly speaking, is the disease as seen in the mouth, fauces, pharynx, and larynx. There are two distinct clinical types: one resembles diphtheria so closely that the best observers are likely to err in diagnosis, while the other type simulates so nearly the throat lesions of syphilis, the mucous patch, the tertiary ulcer, and even the initial sore, that unless one is careful he is likely to mistake an ulcer of Vincent's angina for a syphilitic ulcer. The disease is altogether more frequent than has been suspected. A positive diagnosis is easily made by bacteriologic examination of a smear taken from a gentle curettement or a swab, preferably the former, of the under surface of the pseudomembrane or of the ulcerated surface itself. It may not be found if the smear is from the outer surface of the pseudomembrane. The organisms do not grow on the ordinary culture media and hence are always overlooked by the bacteriologist in examining cultures for diphtheria, which accounts for the supposed infrequency of the disease.

It is probable that 20 to 25 per cent of cases, clinically diagnosed as diphtheria but reported by the bacteriologist as being negative, are Vincent's angina. The author reports two fatal cases of the disease. One occurred in a pregnant woman in whom the membrane occurred in the vagina and at the same time in the mouth and throat, a thick membrane covering all of the buccal and faucial mucous membranes, persisting for two months and producing profound toxæmia, the patient finally dying suddenly as soon as labor began. The second fatal case occurred in a young woman, the membrane covering the alveolar borders and the buccal mucous membrane, causing such pain that she could not swallow, and also a most profound toxæmia and secondary anæmia.

For the mild cases, those resembling syphilitic lesions, various topical applications have been recommended, especially tincture of iodine; but in the author's hands the best has been trichloroacetic acid. This application is made to the ulcerating surface after the membrane has been removed and the ulcer has been cleansed with peroxide of hydro-

gen. Cocain is used to anæsthetise the ulcer before the trichloroacetic acid is applied. Orthoform is prescribed to relieve the pain. Diseased teeth must be corrected. General tonic treatment is necessary. No specific treatment has yet been evolved, but it is hoped that a specific antitoxin may be produced. As salvarsan might possibly be efficacious, the author feels that he will use that remedy in his next serious case.

**Patoureaux: Contribution to the Study of Aberrant Goiters** (Contribution à l'étude des goitres aberrants). *Thèse de Paris*, 1912.

By Journal de Chirurgie.

The article includes an exhaustive résumé of our present knowledge concerning aberrant goiters. The author also cites the following interesting case:

A man 28 years old, who denied previous illness, had a goiter for the past 12 years. This tumor had increased rapidly in size during the last 18 months. Upon examination, a spherical tumor appeared to occupy the median line extending from the cricoid cartilage to the sternum, definitely fluctuating and moving with the trachea upon deglutition. Apparently attached to the left margin of this tumor were two other quite small hard nodules the size of a nut. On the right margin another tumor was present, the size of a goose's egg, which gave the false fluctuation of a solid tumor. It was soft and did not move with the trachea. It pulsated as a result of lying upon several large arteries emanating from the external carotid. Under this tumor, two or three large nodules could be palpated.

Except for a slight hoarseness of the voice, probably due to compression or traction upon the recurrent laryngeal nerve, the patient presented no functional symptoms.

An operation was performed by Poisson. The large fluctuating tumor, which proved to be cystic and which contained a bloody fluid, and the two small nodules were removed through a median incision. The cyst was entirely independent of the body of the thyroid, which, forced upward, was atrophied to a fibrous consistency. A lateral incision along the anterior border of the sterno-cleido-mastoid permitted the removal of the tumor on the right side, which was composed entirely of parenchymatous tissue without cysts. During the operation it was noted that the wall of the trachea, instead of being soft, was thickened and extremely hard. Cure followed the operation.

J. L. ROUX-BERGER.

**Schulze: The Effect of Operative Interference on Alimentary Glycosuria and Adrenalin Glycosuria in Basedow's Disease.** *Beitr. z. klin. Chir.*, 1912, lxxxii, 207. By Surg., Gynec. & Obst.

Alimentary glycosuria occurs in about 25 per cent of cases of Basedow's disease. This diminished carbohydrate tolerance in Basedow patients was first noted by Kraus and Ludwig. Schulze has tested the sugar tolerance in 16 cases, both before and after



operation. The operation consisted usually of resection of part of the thyroid gland. As tests, 100 gm. of grape sugar were given alone, later followed by the injection of 0.3 mg. adrenalin. The urine was examined hourly for sugar. In 4 cases out of 16 Schulze found that the administration of 100 gm. grape sugar produced glycosuria within 1 hour. In all these cases the glycosuria disappeared after the operation. The intensity of the glycosuria was very variable in all cases. Adrenalin glycosuria occurred in 80 per cent of the Basedow cases. This also disappeared after the operation. The removal of part of the thyroid substance has therefore a decided effect on carbohydrate metabolism. The occurrence of glycosuria and its intensity may be used as a criterion of the severity of each case and of the severity of the reaction following the operation. The reports as to the effect of therapy on the carbohydrate tolerance in Basedow's disease are few in number. Hirschl, Schwarz, and Falta observed the disappearance of glycosuria following X-ray exposures to the thyroid gland.

The relation of the glands of internal secretion to carbohydrate metabolism is very complex. The glycosuria in Basedow's disease is partly thyrogenous in origin. It is well known that thyroid tablets produce glycosuria in normal persons, and may produce a real diabetes in a case of Basedow's, as Müller has reported. The intravenous injection of the juice expressed from a "struma" produces glycosuria in animals. The feeding of raw thyroid gland has the same effect. It has also been observed that thyroid feeding increases the tolerance for grape sugar in myxœdema.

The modern investigations on the interrelationship between the glands of internal secretion made especially by Falta, Eppinger, Rüdinger and others, have shown that the thyroid gland and the pancreas are closely related. Glycosuria may be due to a pancreatic insufficiency in some cases of Basedow's disease. The increased adrenalin reaction and the tendency to glycosuria occur only in a certain series of Basedow patients, which Eppinger and Hess have called the sympathetic forms. They are not found in the so-called vagotonic forms, in which we assume an increase in the internal secretion of the pancreas. The influence of the thyroid secretion in Basedow's disease appears to be twofold. It produces an increased tonus of the sympathetic system and it has a direct inhibitory effect on the metabolism of excess carbohydrates in the body. The latter action must be looked upon as a purely chemical action exerted by the altered thyroid secretion upon the products of the internal secretion of the pancreas. The animal experiments of Falta, Eppinger and Rüdinger have shown that normally the thyroid gland has an inhibitory effect upon the pancreas or its secretion. In Basedow's disease this is increased. According to Klose's investigation the thyroid secretion in Basedow's disease undergoes not only quantitative changes but also qualitative alterations which may account for

the glycosuria. As Schulze has shown, the removal of parts of the thyroid gland leads to a high-grade diminution in the glycosuria, which is directly proportional to the amount of thyroid tissue removed. The severity of the glycosuria in Basedow's is proportional to the severity of the disease. Pettavel has described a case of Basedow's with alimentary glycosuria in which he found hydropic swelling of the islands of Langerhans in the pancreas. These changes are to be looked upon as the expression of an absolute insufficiency of the pancreas, which has been overstimulated by the abnormal thyroid secretion and lost its regulatory power in the carbohydrate metabolism.

ERWIN P. ZEISLER.

**Flesch: The Sugar Content of the Blood in Basedow's Disease and Thyrogenous Hyperglycæmia.** *Beil. z. klin. Chir.*, 1912, lxxxii, 236.

By Surg., Gynec. & Obst.

Flesch has estimated the sugar content of the blood in cases of Basedow's disease treated by operation. In none of the cases was a spontaneous hyperglycæmia observed. In 60.7 per cent of cases an alimentary hyperglycæmia was found. The latter was increased in the first few weeks following operative treatment and gradually came to normal.

The initial rise may have been due to the loss of blood. A similar increase was observed in a case of myxœdema in which fresh normal human thyroid was implanted intraperitoneally. The ingestion of thyroid tablets produced the same effect. This is to be looked upon as a thyrogenous alimentary hyperglycæmia, and is due probably to a condition of dysthyroidism. Presumably the products of the internal secretion of the thyroid act on the pancreas and liver, either directly or through the nervous system, lowering the limit of assimilation for carbohydrates and leading to an excess of sugar in the blood. Flesch also made the interesting observation that a high amount of sugar in the blood was associated with a low lymphocyte count, while an increase in the lymphocytes occurred with a decreased glycæmia.

ERWIN P. ZEISLER.

**Marimon: Case of Hydatid Cyst of the Thyroid Gland** (Un cas de kyste hydatique acéphalocystique de la glande thyroïde). *Rev. d. Cien. med. d. Barcel.*, 1912, xxxviii, 485. By Journal de Chirurgie.

Marimon has been able to find only 20 cases of hydatid cysts of the thyroid reported in the literature. His case was that of a boy of 14 years, who had noticed during the preceding two years the formation of a small tumor at the base of the neck, which was of firm consistency, not painful, and of the size of a walnut. This tumor grew rapidly in size during the first six months after its appearance, then remained stationary for a period, and in the last few months before admission had again begun to grow. It fluctuated. There was some fever. Several diagnostic punctures were made, and the diagnosis of tuberculous abscess reached. The tumor formed a swelling under the left sterno-cleido-mastoid which



divided it into two lobes. It was not attached to the skin, and could not be reduced by pressure. The head could be rotated freely and no painful cervical vertebræ could be made out by pharyngeal palpation. The tumor moved with the larynx. Exploratory puncture by the author yielded a purulent fluid of colloidal appearance. Staphylococci were found in this fluid, but no tubercle bacilli. Thyroiditis, or rather strumitis, seemed excluded because of the absence of any pericystic reaction or any of the signs of an inflammatory process. When the cyst was opened at operation, by a small incision just outside the sterno-cleido-mastoid, pus gushed forth under high pressure, and as soon as it had been evacuated a characteristic hydatid membrane was recognized. The cavity was touched with 5 per cent zinc chloride. Microscopic examination of the cyst wall showed the characteristic striation. No daughter cysts were found.

SALVA MERCADÉ.

**Kolb: Thyrogenic Bone Tumors.** *Beit. z. klin. Chir.*, 1912, lxxxii, 331. By Surg., Gynec. & Obst.

Kolb reports a case of sarcoma of the parietal bone in a woman 75 years old, who was operated for

goitre 7 years before. The tumor was extirpated and showed typical thyroid structure. At the autopsy metastases were also found in the lungs. About 59 cases of metastatic thyroid bone tumors were reported up to 1911. Nine of these were located in the parietal bone. The metastases occurred most frequently in the cranial bones and in the vertebral column. Trauma and thyroidectomy played an etiologic rôle in 9 cases. The metastases occurred by way of the vascular system, possibly in some cases by retrograde transmission. The primary growth in the thyroid is frequently latent and clinically may be unobserved. The diagnosis cannot be made positively except where multiple bone tumors plus a struma are present. The course of these thyrogenic bone tumors is prolonged and they may last years. In general a solitary tumor in the bone, if accessible, should be operated on radically as early as possible. Multiple tumors may be treated with the X-rays. Recurrences occur years after removal of the tumor. Exitus in Kolb's case occurred the day after the operation, probably from variations in the cerebral pressure.

ERWIN P. ZEISLER.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Thorne: Theories with Regard to Secondary Growths in Carcinoma of the Breast.** *Brit. M. J.*, 1912, ii, 1745. By Surg., Gynec. & Obst.

Paget in 1889 raised the first doubt as to the truth of the embolic theory of metastatic formation and called attention to the rarity of metastases in the lungs, whereas in the liver they were about four times more common. He concluded that certain organs had a predisposition to become seats of secondary growths. He pointed out the frequency with which certain bones were involved. Handley thinks the spread of cancer is due to permeation of the lymphatics by cancer cells. Perilymphatic inflammation tends to inhibit the growth of these cells, even after they have broken through the lymphatic boundary. Again, it may be that the cancer cells are so pressed upon in the distended lymphatics that they become degenerate, and when freed are incapable of growth. Handley says that perilymphatic fibrosis as a curative process is defective. If these cells rupture the lymphatic before an adequate perilymphatic inflammation has been established metastases will arise. Handley describes the spread of cancer in the parietes by permeation of the lymphatic system as similar to the spread of an invisible annular ringworm. According to Handley's theory, bone should be attached at the point where it is nearest to the deep fascial lymphatic system, and he says this is true in the femur and humerus, in the former metastatic growths occurring first at the base of the great trochanter, and in the latter at the insertion of the deltoid.

According to Stiles the lower and inner margin of the breast lies over the sixth costal cartilage; that is to say, this part of the mammary circumference is only about an inch from the interspace between the ensiform cartilage and the seventh costal cartilage. At the tip of the ensiform cartilage the transversalis fascia is hardly recognizable as a distinct layer, and the parietal lymphatic plexus is separated from the subperitoneal fat simply by the linea alba. It is not surprising if, through this obviously weak spot, cancer frequently reaches the peritoneum before it has succeeded in reaching the pleura, even at points directly subjacent to the primary focus. Handley emphasizes the necessity of careful preoperative examination to exclude epigastric and pelvic metastases.

He also says that in removal of the breast for carcinoma the site of growth should be made the center of a circle from which the deep fascia is to be removed. An annular incision marking out the 10-inch circle of deep fascia to be removed is carried down to the muscles through the deeper subcutaneous fat close to the base of the skin flaps. The anterior layer of the rectus sheath on both sides of the midline should be removed.

Sir George Beatson does not agree with Handley in toto and thinks there is more to the question than this permeation theory alone. Cheatle puts three questions in regard to the posterior spinal root ganglia: (1) Are the inflammatory changes within the posterior spinal root ganglia in any way connected with the origin or spread of cancer? (2) If they are, did they exist before the cancer began, and hence had they anything to do with the genesis



or point of incident? (3) If they occurred secondarily to the cancer, had their presence anything to do with the spread of that disease?

M. S. HENDERSON.

**Schubert: Displacement of the Trachea in Thymus Hyperplasticus.** *Beit. z. klin. Chir.*, 1912, lxxxii, 269. By Surg., Gynec. & Obst.

Schubert reports a case of thymus hyperplasticus in which a displacement of the trachea was observed in the X-ray picture. A child of one year was brought to Rehn's clinic (Frankfurt) with a fractured arm. For 8 months the child had suffered from attacks of suffocation with cyanosis and a hoarse stridor, brought on by crying. One month previously the child had been treated for bronchitis and rickets. The child showed manifest signs of rickets—wide-open fontanelles, a rosary, enlarged epiphyses, etc. The axillary and inguinal glands were enlarged. The tonsils were not markedly enlarged. The X-ray showed a mediastinal shadow which was especially manifest on the left side, and a marked displacement of the trachea to the right was clearly seen. An operation was undertaken to relieve the attacks of suffocation. The left lobe of the thymus weighing 20 gm., was successfully removed. The child's general condition improved markedly after the operation, and the cyanosis and stridor did not return. Previous to the operation the blood picture showed a lymphocytosis reaching 75 per cent. This came down to 50 to 60 per cent after the operation. The thymus showed the usual histologic findings of thymus hyperplasticus.

Schubert places this case in the category of status thymolymphaticus. He assumes that the mechanical action of the enlarged organ is of great importance and may explain the cases of sudden death as Grawitz originally supposed. Paltauf considered the thymus hyperplasia as only part of a general lymphatic hyperplasia with hypoplasia of the aorta, and frequently associated with rickets. Death was supposed to be due to sudden cardiac weakness. Recent investigations have shown that the thymus is to be regarded as an independently functioning organ, as shown by its effect on the blood picture and on the bone changes. The thymus plays an important part in the symptom-complex of the status lymphaticus of childhood. From the standpoint of practical surgery it is of importance to know whether the enlargement of the thymus or its mechanical pressure is the cause of this condition.

The diagnosis of thymus hyperplasticus is based chiefly on the X-ray findings. Höchsinger investigated cases with symptoms of tracheal stenosis in childhood and observed a mediastinal shadow which he interpreted as the thymus. Since then many radiologic observations of the mediastinal region have been made. We know to-day that a definite extension of the median shadow to the left side makes a diagnosis of thymus hyperplasticus very probable in children. A shadow to the right is not convincing. These findings agree with the clinical

observation that the left lobe of the thymus is usually enlarged. Höchsinger reports 4 cases in which the contours of the right side were normal while there was a definite extension to the left.

In the differential diagnosis in children, enlarged bronchial glands must be considered first. They usually produce a shadow on both sides and are asymmetrical. The thymus shadow is more like that of a tumor mass. In adults aneurysms must be differentiated chiefly by their pulsation. Intrathoracic goitres give a cup-shaped shadow. It is important to remember that a thymus hyperplasia can coexist with a Basedow's struma. Mediastinal tumors and tumors of the hilus of the lung are difficult to interpret on the X-ray findings.

An important X-ray sign of thymus hyperplasticus is the deviation of the trachea. This sign was first emphasized by Curschmann in aneurysms. Pfeiffer demonstrated the displaced trachea with the X-ray. The trachea is also frequently pushed aside by strumæ, especially the intrathoracic forms. Wherever the pressure is enough to produce a stenosis, the X-ray may show a slight ampullary dilatation above the point of stenosis. The tracheal displacement may account in part for the sudden death in cases of enlarged thymus, analogous to the so-called "Kropftod."

ERWIN P. ZEISLER.

**Roberts: Early Signs of Mediastinal Tumors.** *Lancet*, Lond., 1912, clxxxiii, 1714.

By Surg., Gynec. & Obst.

Under this title are included malignant growths involving any of the mediastinal structures, enlargement of the intrathoracic lymphatic glands from any cause, and inflammatory swellings. All these tumors manifest themselves by symptoms, due to pressure on adjacent structures. The author bases his remarks on 36 personal cases, all showing evidence of intrathoracic pressure. Of these, 14 were cases of malignant growths of glands or of the lung, 8 were cases of malignant disease of the œsophagus subsequently affecting the surrounding structures, 3 were cases of enlarged tubercular glands, 4 were cases of non-tubercular lymphatic affections, 3 were cases of mediastinitis, and 4 were syphilitic in character. The symptoms met with in these cases were pain, dyspnoea, cough, dysphagia, wasting, anasarca, vomiting, hiccough, and palpitation. Wasting was, of course, common to all the malignant cases, and dysphagia was almost, but not altogether, limited to cases of disease of the œsophagus. The relative frequency of the remaining symptoms may be inferred from the fact that pain was the most prominent symptom in 11 cases, cough in 8, dyspnoea in 7, anasarca in 6, vomiting in 2, and hiccough in 1. Twenty-two out of the 36 cases were malignant in character.

It follows that the prognosis of mediastinal tumor, speaking generally, must be very bad. Of the remaining cases, one died from mediastinopericarditis and two from lymphadenoma, but the remaining 11 cases recovered more or less complete-



ly from their symptoms, and the degree of recovery seemed to vary inversely with the length of time the patient had been affected. It follows, therefore, that early diagnosis of the presence and cause of intrathoracic pressure is particularly important in those cases where therapeutic treatment may be possible; i.e., when the cause is specific, inflammatory, or tubercular in nature.

He takes up in order and reports cases under each heading as follows: 1. Venous obstruction. Under this heading he refers to one vein in particular which is not frequently affected and is apt to be overlooked in this connection, viz., the vena azygos major. 2. Respiratory obstruction. This may occur alone in early cases, but generally when the patients come under observation it is found in association with venous obstruction. 3. Pressure upon nerves. In many instances, especially in the case of slowly growing tumors, pressure upon nerves causes the first indication of trouble. The nerves most apt to be involved are the phrenic, the intercostals, the vagus or its recurrent branch, and the sympathetic. Pain, however, is the most frequent evidence of pressure on the intrathoracic nerves, and owing to the intercommunications between the phrenic and sympathetic and the intercostal and cervical nerves the areas to which the pain may be referred are numerous and extensive. 4. Lastly, one other occasional early symptom of malignant growths of the lower mediastinum is pericarditis. A pericardial rub in old people is almost as diagnostic of malignant growth as it is of rheumatism in the young, or of Bright's disease in middle age. The diagnosis of mediastinal tumors must be made from the subjective symptoms and evidence of pressure on neighboring structures.

*Treatment.* If there be any possibility that the tumor is specific in character, antisyphilitic remedies should be vigorously tried. Even without a positive Wassermann reaction, and especially if the evidence is in favor of the trouble being mediastinitis, the same treatment should be adopted. In cases of anterior mediastinitis, the possibility of surgical interference by means of trephining the sternum should be borne in mind. In cases diagnosed as tubercular, general hygienic measures should be adopted and the use of tuberculin in appropriate cases should be considered. In the great bulk of cases, however, their malignant nature does not hold out any hope of beneficial treatment.

D. C. BALFOUR.

#### PHARYNX AND ŒSOPHAGUS

**Meyer: Cancer of the Œsophagus from the Standpoint of Intrathoracic Surgery.** *Surg., Gynec. & Obst.*, 1912, xv, 639. By *Surg., Gynec. & Obst.*

Although Meyer has so far shared the fate of all other surgeons who have resected cancer of the œsophagus intrathoracically, he having no recoveries to record, he nevertheless briefly publishes the histories of four patients in whom he performed

this operation, and urges others to do likewise in order to aid in determining the causes that are responsible for the failures. In his opinion they are principally as follows:

1. The general condition of the patient is usually too much reduced when he reaches the surgeon.
2. The advanced stage of the disease, the local growth often having transgressed the border lines of the organ in which it started, involving organs in its immediate neighborhood, e. g. pneumogastric or sympathetic nerves, aorta, or lung.
3. The magnitude of the operation.
4. The extreme thinness of the wall of the œsophagus in the human being.

He believes the ideal operation for cancer of the œsophagus to be, of course, resection immediately followed by œsophagogastrostomy. However, this kind of operation is not often feasible, inasmuch as circumscribed carcinomata of the œsophagus are rare, and the stomach in man cannot be lifted more than about 4 inches above the diaphragm. Furthermore, this mode of procedure is feasible only if the tumor involves the lower portion of the œsophagus or cardia. In the majority of cases the carcinoma involves the greater portion of the tube. Too large a piece of the latter has to be resected to make œsophagogastrostomy possible. All that can be done is to excise the tumor, invert, and properly secure the ends. If the patient desires to regain the ability to swallow his food, a new œsophagus has to be made by means of œsophagoplasty.

At the German Hospital a cancer of the œsophagus is attacked wherever it is found, i. e., also if it be situated behind and above the aortic arch. This can be done properly only by first getting the scapula out of the way, best by means of Schede's incision as originally devised for thoracoplasty, and the addition of a number of intercostal incisions. Multiple incisions do not add to the seriousness of the operation further than the few minutes required for closing them.

Sauerbruch reaches the upper part of the œsophagus by means of an osteoplastic resection of the upper ribs and clavicle, from the right side. He excludes all cases with adhesions. Those behind and below the aortic arch are not properly accessible from this entrance.

It has been Meyer's hard luck that all his cases proved to be of the infiltrating type. Several inches had to be removed, and in each instance the œsophagus had to be pulled from behind the aortic arch in order to enable him to do the work properly.

Three patients died the so-called vagus death, due to interference with the pneumogastrics; the fourth died from compression of the lung in consequence of a sero-sanguinolent effusion. Here the patient had experienced no shock from the transposition of the œsophagus, as the pneumogastrics in the upper part were not involved.

In view of the fact that an anæsthetic administered by an expert can be borne even by weak patients, and further, that very little blood is lost



in these operations, Meyer believes that the cause of death, soon after operation, must lie in the handling of the pneumogastrics. He therefore advises that they be exposed in their entire course and blocked by cocaineization below the aortic arch (according to Reich and Crile) and not above the same — if pneumogastrics are cocaineized above the aortic arch the patient cannot live. He furthermore urges that these nerves never be bluntly interfered with, but that the one involved be dissected out step by step from its adhesions, under the guidance of the surgeon's eyes. For this purpose the additional intercostal incisions are required.

In view of the fact that the patients reach the surgeon — at the present time, at least — in a state of great emaciation, Meyer has decided to operate in two stages whenever the disease is located in the middle or upper third of the œsophagus, viz.: (1) thoracotomy; palpation of the tumor; division of the œsophagus below and proper attendance to either stump; (2) Schede's incision; transposition of the tumor in front of the arch; resection; safe closure of proximal stump.

Immediate drainage of the thorax is necessary after the first as well as second stage of the operation. At the German Hospital this is done with the patient left under differential pressure for the first 12 or 15 to 20 hours. Sutures in the œsophagus, in order to hold properly, will often penetrate the lumen, on account of the thinness of the human œsophagus. It has been found best to strengthen the proximal stump with the help of a free fascia transplantation, after a single inversion, a method which Meyer has repeatedly tested with success in the dog. It has been thought that after double inversion such fascia transplantation would also be unnecessary in the human being, as it had proven in the dog. A recent experience of the author's, however, has shown the error of such an assumption and the necessity of fortifying in man even a doubly inverted proximal stump with a piece of fascia, making the latter surround the stump.

Of course, the surgeon's work would be greatly simplified in every respect if operation could be performed early in these cases, which in turn means the necessity of early diagnosis, and efforts should be principally directed to this end. With the help of the delicate touch of Schreiber's sound, stereo-

scopic X-ray pictures, and œsophagoscopy, the attainment of this point should not be difficult, if the profession as well as laity once begin to gain confidence in this branch of thoracic surgery. But to gain this confidence we must be able to point to at least one case of recovery after resection of the œsophagus for carcinoma.

**Menard: Gastrotomy for Foreign Bodies in the Esophagus** (De la gastrotomie pour les corps étrangers de l'œsophage). *Thèse de Paris*, 1912, Nov. By Journal de Chirurgie.

Gastrotomy for foreign bodies in the œsophagus is equally applicable to foreign bodies of the lower part of the tube. The author reviews the different therapeutic measures for removal of foreign bodies and shows their inefficacy and their dangers in certain cases. Propulsion is a dangerous method, except in instances of small alimentary bolus.

Extraction through the natural passage is the method which is most employed and which can be most recommended, but it becomes dangerous when one attempts to extract bodies which are fixed and situated in the lower portion of the œsophagus. Therefore, it is often not efficacious, whether it is the forceps or the basket which is used (120 cases of failure in 167 attempts, Martin).

Esophagoscopy, the method of choice, demands the skill of an experienced operator, and failures are not of rare occurrence even to these. It is a contraindicated method in cases of advanced age and in those having emphysema, cardiac affections, and atrophic cirrhoses with œsophageal varices. Basing his conclusions on these considerations, the author shows the advisability of gastrotomy. He recommends median, supraumbilical laparotomy; the stomach is opened by a parallel or perpendicular incision. The examination of the cardiac end may present some difficulty, but the orifice will appear if one pushes the stomach neither too high nor too low according to the method of Plugren, guiding oneself by previous introduction of a sound through the mouth. The attempt of extraction of the body is made with the fingers, or one can use the forceps, or finally, according to the method of Lajarre, by using retrograde catheterization. Esophagoscopy can also be used. The article is concluded with the description of four cases. J. L. ROUX-BERGER.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Ertaud: Contribution to the Study of Epigastric Hernia; Its Possible Coexistence with Ulcer and Cancer of the Stomach** (Contribution à l'étude de la hernie épigastrique: La coexistence possible avec l'ulcère et le cancer de l'estomac; indications qui en découlent). *Thèse de Paris*, 1912, Nov. By Journal de Chirurgie.

The author takes up the subject from the historical aspect and points out that the digestive dis-

turbances and pains which may accompany epigastric hernias are now understood to be often due to accompanying gastric affections such as ulcer or cancer, rather than — as was formerly supposed — to the involvement of the stomach or intestines in the hernial sac, or to reflex phenomena due to strangulation of vascular or nervous tissues in the hernia. The normal anatomy of the linea alba is taken up from the point of view of the etiology and the pathogenesis of this affection. The author em-



phasizes under this heading its greater frequency in the male, the importance of familial and individual predisposition, and the significance of congenital malformations (faulty union and anomalous development of the recti) in infantile hernia. He then takes up the rôle of strain, traumatism, pregnancy, emaciation, and gastric affections. He admits that, except in the cases where there is laceration of the aponeurosis, trauma alone cannot produce hernia without a predisposing factor of weakness in the wall. He lays stress upon the importance of herniating lipomata and the rôle played by the preperitoneal fat.

In the following chapters he takes up the pathology and symptomatology of this disorder, and proposes to classify these hernias clinically, as painful or painless. The painless hernias often pass unrecognized and yield only physical signs. The symptoms in the cases of painful hernias often seem to be due to coexistent organic diseases of the stomach, such as ulcer or cancer. The German authors Capelle, Ury and Lindenstein have laid stress upon this point. The epigastric pain is often very variable in intensity and in radiation. It may lead to vomiting, with constitutional symptoms of defective alimentation.

In the differential diagnosis the gastric crises of tabes, the dyspeptic ulcer and cancer of the stomach, and umbilical hernia should be considered. It often proves a matter of great difficulty because of the vagueness of the symptoms. Moreover, the coexistence of two conditions is frequent. The author therefore recommends that in the case of a painful epigastric hernia, not only should a radical cure of the hernia be undertaken by surgical means, but at the time of operation a methodical exploration of the stomach should be carried out. Fifteen cases of epigastric hernia with coexisting ulcer or cancer of the stomach are cited at the end of the article.

L. CAPELLE.

**Firket: Primary Epithelial Cysts of the Peritoneum** (Des kystes épithéliaux primitifs du péritoine). *Arch. d. méd. exp. et d'anat. pathol.*, 1912, xxiv, 697.

By Journal de Chirurgie.

Firket reports the case of a man 57 years old, with a negative past history, in whom during a herniotomy a cystic growth was observed on the peritoneum of the hernial sac. During the following year the patient's abdomen gradually enlarged and became tense and painful; there was dullness and fluctuation in its lower portion. The swelling and pain were more marked in the left flank, and here palpation revealed a fluctuating tumor. There was no fever. An incision along the external border of the left rectus showed that the omentum, the mesentery and the parietal peritoneum were studded with innumerable small cysts whose contents were clear. A small piece of omentum was removed; the wound could not be closed because of the extreme distention, and it was necessary to pack the orifice. The patient recovered and stated that he was re-

lieved, but there was no change in the physical signs.

The omental cysts held a clear liquid containing mucin and but very little albumin. The cyst walls were lined with large low epithelial cells, the innermost layer of which bore the cilia. The external layers of connective tissue were not differentiated from the surrounding omental tissue.

Five similar cases have been reported by Henke, Nager and Ernst, Himmelheber and Kirchberg, and Ziegler. The author considers that these tumor cysts arise from the peritoneal epithelium. They may develop independently of one another at distant points on the serous membrane. They are not to be considered as malignant tumors, though certain solid tumors of the peritoneum may arise from them.

P. MASSON.

**Ransohoff: Fat Hernia.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912; By Surg., Gynec. & Obst.

Seven cases were reported by Ransohoff in this paper. According to his conception, certain characteristics accompanied the primary fat hernia. (1) A true fat hernia was a protrusion of a preperitoneal fat mass or lipoma through one of the ordinary hernial apertures. It followed the course pursued by an ordinary hernia. (2) A peritoneal process within such a hernia was always difficult to find because of its small lumen. Such a process, when present (in a minority of his cases), was secondary to the fat hernia and probably resulted from traction. The ordinary contents of a hernia were not found and could hardly enter into the narrow serous tube within the fat mass. (3) The onset of a fat hernia might be sudden, like that of the ordinary type of hernia with preformed sac. In three of the cases recorded the history of sudden onset was very clear, and the proportion of cases too large to be charged to inaccuracy of observation on the part of the patient. (4) The diagnosis of fat hernia was far from easy. Although not reducible, they were capable of a seeming reduction in a fair proportion of cases. (5) An impulse on coughing could usually be obtained, since the hernia could receive the brunt of the increase of intra-abdominal pressure like an ordinary reducible hernia. (6) In very rare instances symptoms of strangulation might result from torsion of the fat hernia. (7) The treatment of fat hernia differed in no way from that of the ordinary type. It was probable that these cases would only be recognized as fat hernias during the operation; therefore measures for radical cure would be instituted, such as those in vogue for the ordinary forms of hernia.

E. S. TALBOT, JR.

**Halpenny: Internal Hernia; with a Report of a Case of Mesocolic Hernia.** *Canad. M. Ass. J.*, 1912, ii, 1094. By Surg., Gynec. & Obst.

Varieties of internal hernia are: (a) left duodenal; (b) right duodenal; (c) mesocolic; (d) hernia into the retrocolic fossa; (e) into the intersigmoid fossa; (f)



into the foramen of Winslow; and (g) into the lesser sac through an abnormal opening.

Left duodenal hernia occurs into the fossa of Landzert which is situated to the left and some distance from the duodenum. The fossa is formed by a fold of the peritoneum raised by the inferior mesenteric vein. The orifice of the sac looks downward and to the right. This is the most common location of retroperitoneal hernia.

Right duodenal hernia occurs into the fossa of Waldeyer, which lies within the cavity formed by the arch of the superior mesenteric artery. The orifice looks upward and to the left.

Mesocolic hernia occurs into the mesocolic fossa, which is formed by a fold containing the left colic artery.

The retrocolic fossa lies behind the cæcum and the lower part of the ascending colon.

The intersigmoid fossa is formed by the two layers of the mesocolon of the sigmoid flexure, and this fossa occurs in from 70 per cent to 80 per cent of all bodies examined by Treves and Moynihan. But according to Moynihan only two cases of hernia which were authentic were reported up to 1906.

Hernia through the foramen of Winslow is more frequent than many of the above mentioned varieties. Moynihan has reviewed twelve cases from the literature.

Hernia through an abnormal opening into the lesser sac has been reported in twelve cases.

**Case report.** Patient had stomach trouble for fourteen years. Trouble came on in attacks, during which time there would be a great deal of pain and discomfort. Between the attacks she would be free from pain and could eat anything desired. The attacks steadily increased in frequency, until a year or so before admission to the hospital. She was at no time free from distress.

The chief complaint on admission was burning pain, which came on one to one and one half hours after eating. This was accompanied by eructations and was relieved by food taking. Vomiting was a prominent symptom and was present almost from the beginning. The character of the vomitus had gradually developed into the type found where there is retention in the stomach and often contained blood. At the time she entered the hospital she would vomit three undigested meals each evening. Nothing had ever been noticed by the patient which would make her suspect blood in the stools.

Examination of the stomach contents twelve hours after a meal showed: undigested food, free HCl, none; lactic acid, a trace; total acidity, 10. Blood examination showed: hæmoglobin, 60 per cent; reds, 5,500,000. No occult blood found in the stool. Palpation of the abdomen showed tenderness over the whole pyloric region, but no mass could be felt. There was apparently an obstruction to the outlet of the stomach, but no definite diagnosis could be made.

Operation showed a perpendicular tear in the transverse mesocolon and the gastrohepatic omen-

tum. Through this all the small intestine had passed from behind forward, except the proximal three inches of the jejunum and the terminal six inches of the ileum. The gut was all replaced and the aperture closed. An old healed ulcer of the duodenum was found, but this produced no obstruction. A fibrous membrane extended from the gall-bladder to the ascending colon, and this was carefully divided between ligatures. The patient made an uneventful recovery.

J. H. SKILES.

**Parker: Tuberculous Mesenteric Glands Simulating Appendicitis.** *Boston M. & S. J.*, 1912, clxvii, 915. By Surg., Gynec. & Obst.

Primary tuberculosis of the mesenteric glands is to be observed clinically as an exception, perhaps as a rarity, but when it does occur it is so alarming in its manifestations that it deserves serious consideration.

These diseased glands may occur anywhere in the mesentery, but the usual site is the ileo-cæcal region. It occurs as an isolated gland or group of glands with no other foci elsewhere demonstrable. It seems to be a disease of childhood and early adult life.

Diagnosis is very difficult and at times impossible, as the disease follows no definite symptom-complex. It occurs either with moderate indefinite pains pointing to no particular abdominal organ or appears, and with a certain preference, under the aspects of acute or chronic appendicitis or ileus.

It occurs with or without a palpable tumor. When a tumor is present a diagnosis is easier, since a palpable abdominal tumor in a child, remaining constant under all conditions and not fæcal, is almost certain to be tubercular glands. Also in adults, multiple tumors in the region of the small intestine, if leukæmia is ruled out, are almost pathognomonic. These glands may cause peritonitis, adhesions and intestinal obstruction or they may be present without associated conditions.

Two cases are reported: First, a case of isolated tuberculosis of mesenteric glands beginning with symptoms of an acute recurrent appendicitis and progressing along the lines of an intestinal obstruction. The disease had caused by direct contact, irritation of and adhesion to a contiguous loop of bowel, with resultant obstruction. In the second case the disease manifested itself as a slowly developing, moderately severe appendicitis. Operation revealed a large caseous gland without appendicitis or peritonitis.

Out of 39 cases reported in the literature, in a large percentage a diagnosis of appendicitis or ileus was made before operation and the true condition recognized only after the abdomen had been opened.

Laparotomy is always indicated. General opinion is that, where possible, the glands should be removed. Extreme care must be taken not to infect the peritoneum. Removal intact is ideal, but where not possible curettage and suture with or without drainage should be performed. The mortality for all types collectively is under 15 per cent.



**Lund: Tuberculosis of the Mesenteric Glands Simulating Appendicitis.** *Boston M. & S. J.*, 1912, clxvii, 918.  
By Surg., Gynec. & Obst.

General enlargement of the mesenteric glands is common in children and is frequently noted in laparotomies for any cause. Localized tuberculosis of the mesenteric glands most frequently occurs in the glands draining the ileo-cæcal coil. The glands become enlarged and go through the regular process of caseation and sometimes of suppuration. Tuberculosis of these glands may occur without any evident focus of infection in the mucous membrane of the ileum, cæcum or appendix. It is believed that they must become infected by the passage of the bacilli directly through the bowel wall into the lymphatics. They may be associated with a normal appendix or with an appendix acutely or subacutely inflamed. Their development is attended by repeated attacks of pain, vomiting, temperature and localized tenderness very closely simulating appendicitis. The tender mass caused by the glands simulates an appendix abscess. As to differentiating these cases from appendicitis, it is fair to say that in the majority of cases the tenderness is a little nearer the median line, muscular spasm is not a prominent symptom and may be absent, and the patient does not appear quite as ill as an ordinary appendicitis patient with the same temperature. To all surgeons, however, who are aware of the extensive pathological processes which may go on within an appendix without the patient appearing ill, these diagnostic points do not seem of much value. If those glands go on to caseation and suppuration abscesses may form and require evacuation. Rupture of the gland may cause a general tuberculous peritonitis. A few cases are reported in the somewhat scanty literature on the subject in which obstruction has been caused by adhesion of a coil of the intestine to the inflamed gland.

The author's treatment, in every case, has been removal of all the glands which are noticeably enlarged, especially those which have gone on to caseation. They may ordinarily be shelled out by careful dissection without damage to the mesenteric vessels. Only a few veins have to be tied. An opening through the mesentery of the small intestine is not infrequently made. This may easily be closed by sutures.

The removal of the glands has a most happy effect, all patients recovering. Drainage is not required unless there has been extensive caseation and an abscess.

It is difficult to determine the cause of the acute attacks of pain. They are not due to appendicitis, for that is not present. They are probably due to an acute infection complicating the glands which are already tuberculous. The pain has been called peritonismus, but that does not explain it in any way. The cases are interesting, and although it is not of great practical importance to differentiate them from acute appendicitis, it is important in delicate children to think of this, especially in the cases of so-called

"appendicitis" without much muscular spasm and with tenderness which is far toward the median line.

**Morris: Increase of Newer Abdominal Surgery Due to Increase in Toxic Disturbances.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.  
By Surg., Gynec. & Obst.

The essayist pointed out that cobweb adhesions in the attic of the abdomen belonged to the toxic group of manifestations, and that we were learning a great deal concerning how these toxic impressions lead to the formation of adhesions in cases without an acute inflammatory onset. In some instances bacteria penetrated the wall of the bowel. The endothelium was shed as a result of their presence, and the lymph which exuded became disorganized and formed permanent adhesions that were common in the region of the cæcum, largely in the region of the sigmoid and largely in the region of the pylorus and the bile tract. Why were we having more abdominal surgery relating to Lane's kink, to Jackson's membrane, to cobwebs in the attic of the abdomen, than we ever had before? For the answer, we should turn to the statistics which were being collected by the Equitable Assurance Association of New York. This company found a rapid increase in insanity and a rapid increase in the number of cases of arteriosclerosis. They found a rapid increase in the number of cases which belonged to the stage of decadence. When there was arrested development as a result of the decadent change that was now taking place in all the civilized nations in our present cultural period, physical defects or stigmata, as classified by psychiatrists, were increasingly in evidence.

What were we going to do about it? Surgery had a place in a number of this group of cases and could afford much help, but the other part of the question related to a better development of individuals in the race. It was a question which was not under the control of the surgeon, but belonged to the physiologist and to the eugenicist; and surgery, he believed, was very important in that it would require a higher degree of skill on the part of the surgeon, decade after decade, and would require him to be more alert and better able to analyze cases than he had been able to do before. There would be more Jackson's membranes, more Lane's kinks, and more adhesions than before, due to the increasing toxic conditions which belonged to the decadent stage of our cultural period. E. S. TALBOT, JR.

#### GASTRO-INTESTINAL TRACT

**Licini: The Influence of Gastric Juice upon Living Organic Tissue.** *Beitr. z. klin. Chir.*, 1912, lxxxii, 377.  
By Surg., Gynec. & Obst.

It is held by some that the action of gastric juice upon the body tissues is one of normal digestion, while others hold that no specific action takes place, but that the action is one of maceration. The author has made a number of experiments on dogs which have led him to the following conclusions:



1. All living organic tissue is as resistant to the action of gastric juice as the stomach wall itself.
2. Only a superficial maceration takes place with accompanying inflammation.
3. Serous membranes are also macerated, and are therefore no protection for any organ.

CARL BECK.

**Thompson: Fatal Hæmorrhage from Erosion of the Gastroduodenal Artery by Duodenal Ulcers.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912. By Surg., Gynec. & Obst.

The essayist had seen two fatal cases of bleeding from duodenal ulcers in spite of the operation of gastro-enterostomy. In both cases the ulcer was situated on the posterior surface of the first portion of the duodenum, and in both the hæmorrhage which proved fatal came on at a time when it looked as if the patients would recover from the operation. The first patient died 34 hours after the operation, with all the symptoms of concealed hæmorrhage; but as no autopsy was allowed one could only surmise from the position of the ulcer that the gastro-duodenal vessel was eroded. The second patient lived 42 hours after the operation.

In discussion, Winslow reported a case of complete anterior dislocation of both bones of the forearm at the elbow.

E. S. TALBOT, JR.

**Paterson: Is Gastric Ulcer a Frequent Precursor of Cancer?** *Lancet*, Lond., 1912, clxxxiii, 1710. By Surg., Gynec. & Obst.

The author doubts the stated frequency of carcinoma developing on gastric ulcer. He says the problem is a difficult one and a dogmatic position is impossible. He considers the question from both the clinical and pathologic sides. The two fallacies on the clinical side are (1) the assumption that we can diagnose a gastric ulcer from the clinical history alone; i.e., because a patient with cancer of the stomach gives a long history of dyspeptic trouble, we are not justified in assuming that the symptoms have been due to gastric ulcer. (2) The assumption that carcinoma is never protracted. He reports a case alive and well four and one half years after a gastro-enterostomy for irremovable carcinoma, from which tissue was removed showing spheroidal-celled carcinoma. The alternative that carcinoma is grafted on ulcer is that simple ulcer and carcinoma may occur in the same patient. On the pathologic side he quotes the statistics of Wilson and MacCarty, stating that 71 per cent of the specimens of cancer of the stomach obtained in the Mayo clinic showed evidences of an old ulceration. He says the weak point of their argument is the absence of proof that the ulcer in which cancer cells are present was ever anything else but malignant. Again he says that death from cancer following gastro-enterostomy for ulcer is a rare event. His own experience is that 1 per cent of his patients, on whom gastro-enterostomy is performed for simple ulcer, die later from carcinoma. He thinks the question

is unsettled and believes that in the meantime the verdict should be "Not proven."

D. C. BALFOUR.

**Jacque and Woodyatt: The Peptolytic Power of Gastric Juice and Saliva, with Special Reference to the Diagnosis of Cancer.** *Arch. Internal Med.*, 1912, x, 560. By Surg., Gynec. & Obst.

The literature on the Neubauer and Fischer glycoltryptophan test for peptolytic power in gastric juice is reviewed and the principles underlying it discussed. In order to ascertain the causes which have led to conflicting opinions in the literature concerning the value of this test, the writers devise a quantitative procedure by which the peptolytic power of gastric juice and saliva is measured and expressed in numbers. A 2 per cent solution of Witte peptone is mixed in definite proportions with gastric juice or saliva and a 10 cc. sample subjected to formalin titration at once. After 24 hours at 37° C., a second titration is made. The difference in the two titrations in terms of  $\frac{N}{10KOH}$  and reckon for 100 cc. gastric juice is termed the "peptolytic index."

Examinations were made of 40 normal cases, 10 hyperacidity cases (benign), 10 subacidity cases with HCl present (benign), 16 cases with HClO<sub>2</sub>; and 23 proven cases of cancer with high and low acidities.

Saliva and gastric juice were in several instances examined in the usual way and also filtered (Berkefeld filter) and handled afterwards with aseptic precautions. The principal conclusions are: Saliva, normal gastric juice and that of benign subacidity cases, when filtered only through paper and covered with toluene according to the usual custom, frequently but not always show some peptolytic power. Superacid gastric juices show less. Passage of the material through a Berkefeld filter eliminates this peptolytic power. It is due to bacteria—not to body enzymes. In 87 per cent of the cancer cases the peptolytic indices were 2 to 10 times as high as the maximum figures obtained in any of 76 non-malignant cases. Filtration lowered but did not eliminate this. In cancer cases there is a filterable peptolytic agent besides the bacteria.

For ordinary clinical purposes it is recommended that a filtered 2 per cent solution of Witte peptone, 2 parts, to gastric juice, 1 part, be used in place of the glycoltryptophan solution "Ferment Diagnosticum," and that exclusion of bacteria by filtration through a Berkefeld or similar filter with subsequent asepsis be substituted for antiseptics by toluene, which is not certain to control bacterial action. Splitting can then be detected by the usual bromine test for free tryptophan or measured by titration as preferred. The test has definite diagnostic value in developed cases of cancer. The writers point out that in a few of their positive cases, but only in a few, 4 out of 20 was the diagnosis in doubt by ordinary methods.



**Gibbon: Partial Gastrectomy in a Case of Multiple Carcinoma of the Stomach.** *Am. J. M. Sc.*, 1912, cxliv, 781. By Surg., Gynec. & Obst.

Multiple primary malignant growths are sufficiently rare to warrant publication of the following case. The history in this case was practically negative until June, 1911, when the patient first developed gastric symptoms. At that time he was suddenly seized with an attack of vomiting. The vomitus was black and the patient thought it contained blood. Similar attacks occurred repeatedly for some months, during which time he rapidly lost weight and color. In the four weeks prior to admission to the hospital he had lost 12 pounds. An interesting point is that the patient never had any symptoms of indigestion. The slight discomfort which he felt showed no regularity as to the time of its occurrence, his chief complaint being vomiting, which did not occur every day, but he often vomited in the evening food which he had eaten at breakfast. Free hydrochloric acid was absent and no lactic acid was found upon examination of stomach contents.

These with other symptoms warranted a diagnosis of probable gastric cancer. Skiagraphs showed marked irregularity in the outline of the greater curvature, both at about the middle and near the pylorus. Operation was undertaken January 27, 1912. A large round nodular mass about the middle of the greater curvature was found, which involved both anterior and posterior walls.

About one inch from the pylorus on the greater curvature was another hard mass with an excavated center. There was no pyloric obstruction and no marked enlargement of glands. The diseased portion of the stomach was resected and a posterior gastro-enterostomy was made, catgut and linen sutures being used.

The patient's convalescence was satisfactory excepting a slight infection, and he was discharged from the hospital March 7, 1912. In three weeks after his discharge he gained 12 pounds and was able to eat all kinds of food. The patient died on July 23, 1912, of general debility, but without a recurrence of any gastric symptoms whatever. His only complaint was weakness in the legs, and it was thought for a time that he might have a spinal metastasis, but this could not be determined as no autopsy was made. The pathological report of specimens showed two ulcers on the mucous surface, the edges of one being raised and quite uneven. Internally the elevated zone dipped down abruptly to the floor of the ulcer.

#### HISTOLOGY

Sections from the margin of the smaller ulcer show an infiltration of round cells with a moderate increase of intertubular connective tissue. Immediately below this is a rather abrupt transition to a new growth, this new growth being made up of tubules very irregular in size and shape, and lined by columnar epithelial cells, mostly in single layer, but in some tubules stratified.

Sections from the wall of the larger ulcer show a transition from mucosa into a tumor mass which extends below the muscularis without involving the overlying mucosa, the contrast between the construction of the two being very striking.

#### DIAGNOSIS

Both ulcers show carcinoma, which in each case is in direct relation with the gastric mucosa. The structure of each, as above described, appears to justify the diagnosis of adenocarcinoma of the smaller ulcer and medullary carcinoma of the larger.

The author then reviews the meager literature, speaking particularly of multiple malignant growths reported by Fenwick. When two cancers of the same structure are found in the same organ, the occurrence may usually be attributed to transference by contact or to autoinfection. It may be that the latter explanation would apply to this case. The clinical history does not bear out the fact that we have a malignant change taking place simultaneously in two ulcers of the stomach. H. A. PORTS.

**Pisek and LeWald: Pyloric Obstruction, with Comparative Study of the Normal Stomach of Infants.** *Arch. Pediat.*, 1912, xxix, 911.

By Surg., Gynec. & Obst.

This paper strongly advises the use of the X-ray in determining the ability of the stomach to force food through the pylorus. For this purpose bismuth was given and an X-ray picture of the stomach was taken at various intervals after feeding. The article is accompanied by 22 cuts of X-ray pictures of the stomach. The food may be observed passing under normal conditions in infants into the duodenum within a minute or two after ingestion. This should be of great value in conditions which show some form of pyloric obstruction. Pyloric spasms can be differentiated from pyloric stenosis by this means. C. G. GRULEE.

**Pelissier: Duodenal Ulcer Obliterated by Adhesions of the Gall-Bladder; Gastro-enterostomy; Secondary Duodenal Perforation (Ulcère du duodénum oblitéré par adhérence de la vésicule biliaire; sténose pylorique. Gastro-entérostomie; perforation duodénale secondaire).** *Bull. et mém. d. l. Soc. anal. d. Paris*, 1912, xiv, 371.

By Journal de Chirurgie.

The author operated a case which he had diagnosed as gastric ulcer with pyloric stenosis. In the course of the gastro-enterostomy, it was observed that the pyloric region was surrounded by adhesions and the pylorus showed a white cicatricial zone. Operative recovery was at first excellent, but on the third day, without any apparent peritoneal reaction, the patient died. At autopsy the peritoneal cavity was found filled with a foul liquid containing food particles. On the anterior aspect of the first portion of the duodenum, there was present a large perforation cut out as with a stamp through the cicatricial tissue. On the dependent surface of the gall-



bladder a round area, delimited by a thin line of broken adhesions, corresponded to the shape of this duodenal perforation and could be exactly superimposed upon it. It was evident that the primary duodenal perforation had been plugged by the gall-bladder, and that operative manipulation, which had torn apart the old adhesions, was responsible for the peritonitis.

L. CHEVRIER.

**Struthers: Perforated Duodenal Ulcer.** *Edin. M. J.*, 1912, ix, 505. By Surg., Gynec. & Obst.

In an excellent analysis of 27 personal cases, Struthers shows that the histories fall into three groups—63 per cent with chronic dyspepsia for months or years; 20 per cent with only occasional gastric disturbances, in no way characteristic of duodenal ulcer; and 15 per cent previously in perfect health. This shows that while a previous history of dyspepsia is helpful in diagnosis, a negative history does not rule out perforation. He does not agree with Moynihan in the latter's statement that "no chronic ulcer of the duodenum exists without betraying its presence by symptoms . . . of the clearest significance."

There was no premonitory sign or symptom of imminent perforation, but the diagnosis after the onset of peritonitis was easy, except that in three cases the physical findings pointed to an appendiceal attack. When the differentiation between the two conditions is impossible, Struthers opens through the right rectus below the umbilicus and explores the appendiceal region first.

In four cases the improvement in the few hours before admission to the hospital made the diagnosis of a severe lesion doubtful. The history, suggestive of an ulcer with severe initial pain, decided him to operate, and perforations were found in each case, although the only preoperative sign present was slight tenderness and moderate resistance over the upper half of the right rectus. In the later stages of the illness the origin of the peritonitis is largely a matter of guesswork before operation.

Stress is laid on complete muscular relaxation at operation, chloroform being preferred as an anæsthetic, while the previous use of morphin is discouraged as likely to diminish the activity of the respiratory center.

In all cases the ulcer was on the anterior wall of the duodenum within one and one half inches of the pylorus, the largest diameter being from two to six mm. in length. The size of the ulcer bore no relation to the elapsed time since perforation, large openings being found within a few hours and vice versa. Food material in the abdomen was so rare that the amount of actual leakage was considered to be slight, probably because of arrested peristalsis following perforation.

In Struthers' opinion, excision of the ulcer is unnecessary, infolding to secure broad peritoneal approximation being enough and closure with interrupted No. 2 or 3 plain catgut stitches being preferred to the use of silk. If the patient's condi-

tion permits, he believes a posterior gastro-enterostomy should be done, the resulting rest promoting healing of the ulcer and tending to prevent recurrences. Practically all of 17 cases in which gastro-enterostomy was done are now without digestive symptoms, while two out of three in which a gastro-enterostomy was not done still have indications of a duodenal ulcer. Relapse is what he expects without gastro-enterostomy, and for this reason its performance is advised when possible, although he states that it is not an indifferent operation, and should not be done merely because it helps recovery, but only if it be a permanent benefit to the patient. Struthers believes that flushing the abdominal cavity with saline is probably harmful, and he closes the wound but provides suprapubic drainage.

In this series of 25 operated cases, there was a mortality of 20 per cent, those that recovered being operated within 24 hours of the onset. Sixteen had a posterior gastro-enterostomy done, and of those, 14 at least have had no relapse, the other two having been lost sight of. Of the three in which only infolding of the ulcer was done, two have had a return of symptoms after some months.

Five patients died, all of a general peritonitis; in none was gastro-enterostomy done, their condition being considered too bad to justify the prolongation of the operation.

E. K. ARMSTRONG.

**McClannan: Intestinal Obstruction, with a Clinical Study of 181 Cases.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

McClannan stated that the form of operation required in any given case must depend on the nature of the obstruction and on the presence or absence of complications. Thus, we grouped the operations performed into three classes, namely: relief of the obstruction, excision of intestine, and enterostomy.

In order to judge the efficiency of any of these operations it was necessary that the procedures be compared with regard to the stage of the disease at which the operation was performed. This was the only logical basis for study of the treatment of obstruction, and avoided the confusion of many classes as to causation, differences in position of the obstruction, and variations in the completeness of the occlusion. Each of these factors altered the rapidity of development and the duration of the three stages of the disease, consequently a study of intestinal obstruction from the point of view of the symptomatology and treatment of these stages balanced the relation of the various factors and made the comparison of operative statistics possible.

Of 34 patients treated in the first stage, all recovered. Of these, 12 were relieved of their symptoms by enemas and purgatives. The other 22 were operated upon. In 15 the obstruction was relieved; resection was performed in 3 cases; enterostomy with short-circuiting and enterostomy with relief of obstruction, once each; simple enterostomy was done twice. Relief of the obstruction, therefore,



was the best operative procedure in cases treated during the first stage. When provision had been made for a delayed enterostomy, this was the best procedure in post-operative obstruction, probably because opening the previously brought up loop gave no operative shock.

Sixty-six patients were operated upon in the second stage; 55 recovered, and 11 of these died as a result of a second operation or some complication developing later than one week after the original operation. The operations performed were as follows: relief of obstruction, 44, 6 fatal; short-circuiting, 2; excision, 14; enterostomy, 4; enterostomy with other operations, 15. One patient was relieved by an enema. Gangrene was present in 10 cases: 2 were treated by anastomosis and excision; 8 patients recovered; 6 were resected. Relief of the obstruction seemed the best operation in the second stage, provided gangrene had not developed. In the presence of gangrene, resection was the best operation, provided the constitutional symptoms were not pronounced. In the latter event, enterostomy should be added to the resection; or if the condition of the patient was grave, the loops might be brought out of the abdomen and packed off with gauze, with an enterostomy above the obstruction.

Eighty-two patients were operated on in the third stage; 52 died. Relief of the obstruction was done in 22 per cent of the cured and in 34 per cent of the fatal cases. Enterostomy and relief in 22 per cent of the cured, in 8½ per cent of the fatal. Simple enterostomy in 45 per cent of the cured, in 32 per cent of the fatal cases. Enterostomy with other operations in the remaining cases—3 cured and 9 fatal. Resection was done in one fatal case and extrusion in 2 others. One patient was relieved by an enema, and 5 died without operation. Gangrene was present in 15 cases: 2 cured and 13 fatal. In both the cured cases enterostomy and excision were done.

In the third stage enterostomy should be done, either alone or in connection with the other procedures. In the non-gangrenous cases enterostomy was done in 77 per cent of the cured and in but 41 per cent of the fatal cases.

Bloodgood, in discussion, said that the essayist was the first to publish a large number of cases showing the importance of the effect of washing out the stomach and of giving enemas to aid in the early diagnosis of intestinal obstruction, a thing always neglected outside of the hospital, and often neglected in the hospital.

Brown said the importance of draining the distended loop of bowel above the obstruction could not be too strongly accentuated. A number of years ago, in a paper he read before the Mississippi Valley Medical Association, he reported a series of cases in which he resected the gangrenous gut and described a method of draining the loop of intestine above the obstruction, namely: to cut across the bowel, introduce a tube into the bowel, and while an assistant was handling the bowel above, the resec-

tion was made without losing any time. The use of the stomach tube and rectal tube, both before and after operation, was of exceeding importance.

Stone stated that with the use of eserine and enemas, properly given, he had never seen a purgative necessary. Since he had been using that combination he had never found a secondary operation necessary where the conditions were not most formidable where that simple method of treatment was properly tried.

Mixer said that in looking back on the fatal cases of intestinal obstruction it would be found death had occurred in those cases where the intestine had not been emptied, or where an anastomosis had been done immediately, and the septic contents of the occluded intestine had been poured into the lower intestine. Abbe pointed out that the intestine below was starved and ready to take up the material poured down from above, and in that way a rapid and fatal sepsis ensued.

Charles H. Mayo stated that in the last year, in cases of intestinal obstruction, they had in four cases, through the appendicostomy incision, been able by drainage to overcome the immediate obstruction.

Ransohoff called attention to the use of the X-ray in locating the obstruction in acute cases. Outside of hospitals this was out of the question, but when a patient was brought into the hospital it took but a short time to get an X-ray picture, and in three recent cases the obstruction was located by this means.

Morris stated that for a year or more he had been using injections by rectum of bismuth solution, also using it by the stomach as far as possible, and then employing the fluoroscope, and in this way determining definitely the seat of the obstruction.

Royster said that if there was retention of scybalous masses, and the bowel was gripped on something and could not release itself, if the gut was much distended and the patient was vomiting, with very little or no pain, we could give a few doses of eserine, say one fourth of a grain of the salicylate, every two or three hours until two or three doses were given, to be followed by an alum enema. If the patient was in great pain we could give 1½ gr. of hyoscin, to be followed two hours later by an enema. With this treatment he had found some cases did not need operation at that time and operation could be safely done later, while other cases did not need operation.

Finney said he had used the appendix after the method mentioned by Mayo in eight or ten cases of intestinal obstruction, and in his experience it did all that Mayo said it did, and it was a very valuable aid in those cases where the obstruction was low down.

The indiscriminate use of eserine was followed by disastrous results. His attention had been called to the fact by Abel, of the pharmacological department of Johns Hopkins, that eserine under ordinary circumstances had a marked depressing effect. In



one case it apparently had a very alarming effect. In one or two others it was followed by marked symptoms of depression, but its withdrawal was followed by decided improvement.

Hall emphasized the point made by Dr. Brown in reference to draining the intestine above the seat of obstruction in those cases where it was thought best, at the time of the operation, to resect the gut. He had used the method advocated by Dr. Brown in a number of cases with satisfactory results. As to the use of eserin, he had seen a number of cases in which there was depression following its administration, and he usually gave it in no larger doses than one fortieth of a grain.

Winslow said that neither eserin nor any other agent was going to relieve a patient when the intestine was mechanically obstructed, and there was nothing to do but to operate. Eserin could only do good in cases in which the bowel was not mechanically obstructed.

Bovée had been using eserin after operation as a routine in every case ever since Craig, of Boston, brought it to the attention of the profession. It never failed to produce a bowel movement in a case in which there was no intestinal obstruction.

Crawford had personal knowledge of a patient who was given one fiftieth of a grain of eserin, by mistake, and who was greatly prostrated by it, so that for two or three hours death seemed imminent. However, the patient did not die. Another patient, a clergyman, to whom he administered one fortieth of a grain of eserin on the second or third day after the operation, told him he felt as though a stick of dynamite had exploded within him.

Milne, of London, said it was very fashionable in the London Hospital to give eserin, but now it was only the extreme cases of distention that responded to the use of eserin. They did not give more than one hundredth of a grain at a dose, and they did not give more than three such doses. He could not say that in any of the cases they had noticed any particular collapse from the use of the drug.

Elbrecht related some experiments with eserin on normal individuals. He found that small doses had absolutely no effect in many instances, whereas larger doses gave prompt action of the bowels. He found it was usually twenty minutes to half an hour before it acted.

E. S. TALBOT, JR.

**Miller: Acute Invagination of the Ileum Secondary to Sarcoma of the Small Intestine.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

In a search through the list of reported cases Miller found only a few instances similar to his own case in which sudden acute symptoms gave the first warning of intestinal trouble. Only three such cases were found in Moynihan's list. In the other 37 cases, symptoms of transitory abdominal pain, occasional vomiting attacks, and nausea preceded the recognition of the growth from a few weeks to

over three years. If there could be a cardinal symptom it would be the presence of a tumor. It was present in over 90 per cent of cases when brought for examination or operation. It was always present in children and nearly as constant in adults. More than half the cases were reported in patients over 40 years of age. Cachexia was only marked in children, except in the late stages. Fever was often present, as may be expected from the large percentage in which ulceration occurred. Constipation was not a reliable symptom, although often present. Diarrhœa was noted in a few. Three cases had been reported as occurring in the ileum, years after severe attacks of typhoid fever, and Nothnagel reports an instance of sarcoma that developed from tuberculous ulcerative scars. In 30 out of 46 instances the growth was single; in 16, multiple. It was curious to note the frequency of adhesions between the bladder and involved coil of intestine. In 46 cases, Lecène reports adhesions in 12, 7 of which were instances in which the bladder was the involved structure.

E. S. TALBOT, JR.

**Horsley and Coleman: Experimental Devascularization of Intestines with and without Mechanical Obstruction.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912. By Surg., Gynec. & Obst.

In the joint paper by Coleman and Horsley they reported twelve experiments, all on dogs, done under full anæsthesia, in which segments of intestine from the lower ileum, varying from two to five inches, were devascularized by cutting the attachment of the mesentery close to the bowel. In all except one the omentum was wrapped around the devascularized segment. In five instances the segment was obstructed by tapes at each end. Two of these dogs died from gangrene and perforation of the loop. One died after three days, without perforation; one lived thirteen days, and the other lived fourteen days. In seven dogs a loop of intestine was devascularized without being obstructed and the omentum wrapped around the segment. None of these dogs died as a result of the operation. The authors concluded that either no toxic substance was formed in the devascularized loop or segment of intestine which was unobstructed, or else this substance, if formed and excreted, was not absorbed by the normal mucosa. They emphasized the fact that in dogs, at least, a loop of bowel when separated from its mesentery and unobstructed might be properly nourished by wrapping the omentum around it.

E. S. TALBOT, JR.

**Gregor: Intestinal Lesions Due to Contusions of the Abdomen.** *N. Y. St. J. M.*, 1912, xii, 727.

By Surg., Gynec. & Obst.

The object of this paper is to call attention to the relative frequency of intestinal rupture after abdominal contusions, especially in rural and agricultural districts. Three types of injuries were described as producing these lesions: First, that produced by a rapidly moving object affecting a circumscribed



area of the abdominal wall. Second, crushing injuries when the intestines were caught between the contusing force and some bony surface. Third, the tearing accident produced by a fall. In the first class, the resulting rupture was described as a blow-out. The elements entering into the mechanism of the blow-out were: high velocity, a small point of impact, the surprising of the abdominal muscles and an inflated condition of the bowels.

In diagnosis, the primary shock was to be disregarded, as that depended upon injury to the abdominal sympathetic system and not to the intestinal lesion. But shock, continuing or developing after four or five hours, with increase of pulse rate, associated with increase of abdominal pain and tenderness, with nausea or vomiting and, most important of all, with muscular rigidity of the abdominal wall, was sufficient evidence to justify an exploratory incision. Illustrative cases are given in the paper.

**Thornburgh: Multiple Gunshot Wounds of Intestine without Perforation of Lumen.**  
*Ann. Surg., Phila., 1912, lvi, 886.*

By Surg., Gynec. & Obst.

A private of the 30th Infantry attempted suicide, March 29, 1912, by shooting himself in the abdomen with .30 calibre Army Springfield rifle. The muzzle was held against abdomen outside of the clothing 5 cm. to the left and 2 cm. above the umbilicus. Entrance wound 3 cm. x 2 cm. in diameter. Exit wound 1 cm. diameter, at level of umbilicus and directly above the left posterior superior spine of the ilium.

A laparotomy was done less than an hour after injury was received. Belly was full of blood, requiring ligation of 12 large mesenteric vessels; 35 cm. of ileum was found denuded of all peritoneal and most of its muscular coat. Mesentery of same completely destroyed. Numerous injuries to descending colon and mesentery, but lumen of gut not perforated at any point.

On account of severe shock, resection of ileum was out of the question. The omentum was brought down and a pocket formed, completely covering injured bowel and mesentery. This was fastened by interrupted sutures, replacing outer two coats of ileum and both layers of mesentery. Uninterrupted recovery.

**Van Bisselick: Acute Intestinal Obstruction Caused by a Polycystic Kidney** (Occlusion intestinale aiguë par un rein polycystique). *J. d'Urol., 1912, ii, 812.* By Journal de Chirurgie.

Bisselick reports a case with bilateral cystic kidneys, which, following hæmorrhage into one of these kidneys, showed symptoms of acute intestinal obstruction.

The patient was a man of 55 years. Upon admission to the hospital he showed signs of ileus. There was abdominal distention and vomiting; and a feeling of pressure in the left side with extreme

tenderness in this region. The left flank was occupied by a tumor which was very painful on pressure. The overlying abdominal wall was rigid, and on percussion this area was found dull from the costal margin to the iliac fossa. Cæcostomy was performed, after which the symptoms of obstruction disappeared. It was then possible to make out a fluctuating tumor in the left flank. This tumor gave lumbar ballottement. Aspiration of the tumor was performed and a yellowish, rather turbid fluid, showing traces of blood, obtained. The presence of peristaltic waves which started at the cæcum and reached as far as the epigastrium led at first to the diagnosis of an infected neoplasm of the descending colon with secondary retroperitoneal abscess. But inflation of the colon was found to diminish considerably the area of dullness over the tumor, and the conclusion was arrived at that the latter was retroperitoneal and probably renal. Ureteral catheterization showed that the right kidney was functioning, though the urea elimination was diminished. A left lumbar incision showed a cystic kidney, in which there had been a hæmorrhage that had colored the contents of the cysts. During manipulation a large cyst ruptured. The capsule of the kidney was then incised, the clots removed, and the cavity cleaned out. The patient made a good recovery, and the lumbar wound healed. Palpation of the left hypochondrium had shown the existence of an enlarged kidney on this side. The author's conclusion is that the extreme distention of the kidney, due to the hæmorrhage, had caused intestinal obstruction by pressure on the descending colon. He had been unable to find a report of a similar case.

J. TANTON.

**Bonneau: Tuberculosis of the Small Intestine** (Tuberculose de l'intestin grêle). *Paris chir., 1912, iv, 900.* By Journal de Chirurgie.

The case was that of a man of 29 years, formerly operated on for appendicitis, who on admission complained of attacks of abdominal pain with a sensation of transverse subumbilical pressure. Peristaltic waves and borborygmus were observed. The temperature reached 104°. There was well marked meteorism. The attack lasted three days and was terminated by the passage of large, green, fetid stools and gas from the intestines. After two or three days of quiet, a similar attack would follow. The patient had lost 12 kilos in seven months of this illness. His abdomen was slightly distended, though elastic. Below the umbilicus there was a sensitiveness to pressure, and at certain points a feeling of doughy consistency. Rectal examination revealed soft adherent masses above the prostate. A diagnosis of tuberculous peritonitis with intestinal stenosis was made. At operation it was found that some loops of the small intestine were encased in inflammatory tissues which at certain points had greatly constricted their lumina; the sigmoid and colon were not much involved; the cæcum was definitely infiltrated and thickened, but not stenosed;



several large glands were found in the mesentery. Bonneau resected 50 cm. of the small intestine, including the points of stenosis. Recovery without complications. Two months later the patient was still free from the attacks, though unable to work because of weakness and the continuance of diarrhoea. The author makes no claim for a cure, but considered the operation indicated as a palliative measure of value in a hopeless case.

J. L. ROUX-BERGER.

**Wiener: Gangrene of Ileum Complicating Appendicitis.** *Ann. Surg.*, Phila., 1912, lvi, 900.

By Surg., Gynec. & Obst.

Report of a unique case of gangrene of the ileum, at some distance from the ileo-cæcal valve, with normal ileum intervening between the gangrenous portion and the cæcum, and with the cæcum normal. Operation during the fourth attack of appendicitis disclosed turbid fluid in the peritoneal cavity. The appendix had almost completely sloughed away. A loop of small intestine was found adherent to the abscess cavity, completely denuded of its mesentery, the vessels of which had thrombosed. On the eighth day a fæcal fistula developed, and the loop of ileum was found completely gangrenous in the wound. One hundred and thirty-eight days after the first operation a side-to-side ileo-colostomy was done for a persistent fæcal fistula. In spite of this, although most of the stool came away per rectum, a fæcal fistula still persisted. One hundred and seventy-eight days after first operation an extensive intestinal resection was done. The ileum distal to the point of ileo-colic anastomosis was excised, together with the cæcum and part of the ascending colon. The open ends of ileum and colon were closed with three layers of sutures. About ten inches of ileum and twelve inches of large intestine were removed. There was a slight temporary fistula at the site of the sutures in the ascending colon. The wound finally healed completely, nine months after the original operation. Eighteen months later the patient was still in good health and had two movements of the bowel daily.

**Singer: On the Secretory Activity of the Stomach in Chronic Appendicitis, with Gastric Symptoms.** *Lancet*, Lond., 1912, clxxxiii, 1711.

By Surg., Gynec. & Obst.

It is now generally admitted that there is a definite association of chronic appendicular disease with gastric ulcer. The author has recently had the opportunity of making very detailed analyses of a series of 300 cases presenting gastric symptoms. Most of these cases were subjected to laparotomy. He has investigated the chemical side of the question and tabulated his results in detail. His experiments and analyses make it appear likely that the situation of an ulcer in the pyloric region or duodenum may itself be a factor in the increase of hydrochloric acid secretion. A gastric or duodenal ulcer regarded in this light thus becomes not only a result

but also a cause of hyperchlorhydria. His conclusions are as follows: 1. Chronic appendicitis has frequently been found in association with gastric symptoms. 2. When this association occurs, a gastric or duodenal ulcer may or may not be present, but in all cases the gastric juice has yielded abnormal analytical results. 3. The abnormalities may consist of hypersecretion or of hyposecretion both of chloride and pepsin, of the presence of a peptolytic ferment, and of the elevation of the "nitrogen factor." 4. These abnormalities can best be explained as due to toxic substances which act on the stomach and on the appendix. 5. Removal of the appendix does not always relieve or improve the symptoms.

D. C. BALFOUR.

**Reder: A Sign of Diagnostic Value in Obscure Cases of Chronic Appendicitis Elicited by Rectal Palpation.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

In the more obscure forms of chronic appendicitis, where other points had failed, Reder stated he had been able to make an absolute diagnosis through a point located in the first (sigmoidal) portion of the rectum. These cases belonged to a class whose symptomatology did not invite attention to the appendix region on account of the total absence of focal symptoms. In many of these cases pressure at McBurney's point had not given the reflex pain that was expected and usually obtained in a lesion of the appendix of this character, while pressure at Morris' point had proven equally as negative. An absence of these reflexes was usually sufficient to dismiss the thought of an existing appendix lesion. The point in the rectum, however, had invariably given a positive reaction in the presence of a chronically diseased appendix. The part of the rectum concerned in this examination was the first portion. It began at the sacro-iliac synchondrosis, and usually the left side was entirely covered with peritoneum and had a mesorectum which gave that portion of the bowel a certain amount of mobility. This mobility was of some value in the examination. Within the lumen of the bowel, at the junction with the sigmoid about  $3\frac{1}{2}$  or 4 inches above the margin of the anus, there existed aggregations of circular fibers that formed a valve. This valve was constant, was known as the valve of O'Beirne, and varied but little in its distinctive circular characteristics. This valve served as a landmark, and was an important factor in the examination.

In making the examination to reach the points, the patient was comfortably placed upon his back on the examining table, with both legs flexed. The index finger, well lubricated, was introduced into the rectum, and a search made for O'Beirne's valve. This valve was sometimes reached with some difficulty, especially when it was located high or when the examining finger was rather short. It was absolutely necessary that the valve be located. Its recognition was readily perceived, the sensation imparted being very similar to that which the



examining finger experiences when introduced into the os uteri during the first stage of labor. In size, he had found the valve to vary, being in some as large as a ten-cent piece, and in others as large as a quarter.

The valve having been located, the finger was hooked into it and gentle traction made upon the structures to test the mobility of that portion of the rectum. The tip of the finger was allowed to rest within the lumen of the valve, and the patient asked if he experienced any pain. The answer was usually "No." Should there be any pain, it was generally referred to the sphincter area of the rectum. By allowing the finger to rest for a short time this pain would subside. After being assured by the patient, of the total absence of pain, the tip of the finger was gently pushed upward toward the right iliac fossa, when, in the event of a lesion of the appendix, the finger would touch a point beyond the valve that would cause the patient great pain. As a control maneuver, a similar point might be touched by sweeping the examining finger toward the left inguinal fossa, usually with negative results. The accuracy of the diagnostic value of this point had been verified in some 200 cases. The patients comprising this series gave a period of time when their health was not good ranging from six months to twelve years. After removal of the chronically diseased appendix the patient was fully restored to health in from three months to two years.

E. S. TALBOT, JR.

**Ewart: The Preoperative Diagnosis of Appendicitis: Demonstration of a New Method by Dorsal Examination.** *Brit. M. J.*, 1912, ii, 1741.  
By Surg., Gynec. & Obst.

The author believes that if this method of dorsal percussion were used, some fatal cases of abscesses would be correctly diagnosed and successful operation performed. There is normally a dull area beneath both sacro-iliac joints due to the iliac blood-vessels. If a retrocæcal abscess or retrocæcal appendix be present, the dullness on the right side will be increased.

M. S. HENDERSON.

**Case: X-Ray Studies of the Ileo-Cæcal Region and the Appendix.** *Am. Quart. Röntgen.*, 1912, iv, 93.  
By Surg., Gynec. & Obst.

The ileo-cæcal region was examined radioscopically and radiographically after the bismuth meal and following a barium sulphate clysma. The injection method was found to be especially valuable to show the mobility and relations of the colon, as well as incompetency of the ileo-cæcal valve. The meal proved more serviceable in determining motility and points of adhesion, and also to show the appendix.

The author found incompetency of the ileo-cæcal valve to be present in 33 cases out of 200 examined. In some of these it was associated with perityphlitic adhesions; in some overdilatation of the cæcum seemed to induce it, while in others no cause could be assigned.

Ordinarily the bismuth meal starts to pass through the ileo-cæcal valve in about four hours, and the greater part of it is in the cæcum and ascending colon in six hours. Where stasis occurs, due to adhesions, the ileum becomes distended proximal to the stenotic part. The latter is found to be firmly fixed and cannot be displaced by changes in position of the patient or by palpation. This stasis in the ileum may, by dragging on the mesentery, cause a duodenal stasis as well. An obstructive lesion of the colon may be responsible for interference with the onward course of the bismuth in the ileum.

Regarding the appendix, the author has seen over 60 cases in which this organ became filled with bismuth for a period varying from a few hours to many days. The size of its lumen, its shape, its position, and whether it is fixed or movable can be ascertained. Poor drainage, as evidenced by retention of bismuth over a period of several days, would seem to indicate potentiality for danger and argue for removal of the organ.

Defects in the filling of the cæcum with extensive fixation and constriction of the terminal ileum, especially if associated with pulmonary tuberculosis, is very suggestive of tuberculosis of the ileo-cæcal region. Malignant tumors may give much the same picture.

Adhesions between the cæcum and other parts of the colon may cause considerable distortion and interference with motility. Even the sigmoid has been found thus attached to the appendix in one case and to the cæcum and gall-bladder in another.

A cæcum mobile and atonic may be readily diagnosed by the Röntgenologic method. Fistulous tracts leading to the cæcum may be traced by filling them with Beck's paste and simultaneously injecting the colon with a bismuth suspension.

ADOLPH HARTUNG.

**Keith: Functional Nature of the Cæcum and Appendix.** *Brit. M. J.*, 1912, ii, 1599.

By Surg., Gynec. & Obst.

Keith says the opinion has gradually been gaining ground, largely through the work of Lane, Metchnikoff and Barclay Smith, that the great bowel from appendix to rectum (in man) has become a useless and dangerous structure. His paper represents study and a review of much literature to show that it is by no means proven that this structure is useless, and suggests that if we only knew how to keep it suitably employed, by altering our diet to meet its requirements, we might make it serve us and future generations just as well as it answered the digestive needs of primitive and successive races in the past. Interesting diagrams are shown of comparative anatomy study in man, the rat and the ostrich. The author does not agree with the theory that the appendix is vestigial. He mentions that chimpanzees in captivity and on human diet frequently die of appendicitis, though he says there is no evidence to show that this anthropoid in its natural habitat develops this disease.

M. S. HENDERSON.



**Cugnier: Primary Malignant Tumors of the Ileo-cæcal Valve** (Les tumeurs malignes et primitives de la valvule ileo-cécale). *Thèse de Paris*, 1912, Nov. By Journal de Chirurgie.

The author has brought together observations of 60 cases of malignant tumors arising definitely from the valve. There is no pathologico-histological report of 16 of these, the total number on which this work is based, therefore, being 44 cases.

Cancer of the ileo-cæcal valve is a relatively rare tumor. It is difficult to determine the percentage of occurrence, because it has frequently been studied with cancer of the terminal portions of the ileum and sometimes as a particular case of cancer of the cæcum. Cancer of the valve proper can invade, secondarily, either the cæcum or the ileum, giving two anatomical types, cæcavalvular and ileo-valvular; this last form is accompanied with a very marked stenosis of the ileum.

The aspects of the tumor are variable; sometimes it is a lateral tumor implanted by a base more or less large on one of the lips of the valve and expanding into the cæcum or the ileum; sometimes it is an annular tumor—"cancer en virode." More frequently it looks like a collar which retracts the valvular orifice. When it invades the side of the cæcum it may be very extensive, reaching to the ascending colon or even extending beyond it. Metastases into the glands is rare and late.

The symptoms are of two kinds. First, chronic occlusion (alternating diarrhoea and constipation syndrome of König, syndrome of Ricard-Mathieu) tending toward an acute occlusion or cachexia, with invagination of the ileo-cæcal region into the large intestines, at first chronic, then acute. One can determine then the presence of a tumor and the emission of bloody mucus.

The treatment consists in resection of ileo-cæcal junction. If this is contraindicated by the local or general condition, an entero-anastomosis including the ileo-cæcal loop should be made.

J. L. ROUX-BERGER.

**Lane: Chronic Intestinal Stasis.** *Lancet*, Lond., 1912, clxxxiii, 1706. By Surg., Gynec. & Obst.

The author defines the term "chronic intestinal stasis" as an abnormal delay in the passage of the intestinal contents through a portion or portions of the gastro-intestinal tract, which results in the absorption into the circulation of a greater quantity of toxic or poisonous materials than can be treated effectually by the organs whose function it is to convert them into products as innocuous as possible to the tissues of the body. The author refers to Carrel's experiments with living tissues outside their natural environment, and says that he has found the most satisfactory confirmation of his views in the study of Carrel's work. To meet various diseases he adopts means to improve the drainage scheme, whether simply mechanical or operative, with the most excellent results. This is nowhere better exemplified than in the extraordinarily rapid dis-

appearance of large tubercular glandular masses in the abdomen after disconnection of the big bowel. Pigmentation of the skin becomes a very marked feature in advanced cases of stasis, especially in patients with dark hair. On eliminating the supply of poison the color and the circulation of the skin change with remarkable rapidity. "In the case of the kidney affected by so-called Bright's disease, which is merely a product of chronic intestinal stasis, the exclusion of the large bowel is followed by an improvement in functioning which is as extraordinary as it is rapid, and a patient who has been face to face with death is quickly restored more or less completely to health, usefulness, and activity."

The great difficulty in the treatment of chronic intestinal stasis and its results is to recognize when the end result has assumed such proportions that the removal of the primary cause does little or no good. As an extreme instance, take cancer of the breast or of the ducts of the liver or of the pancreas, all products of chronic intestinal stasis in the first instance. In the case of the thyroid, Lane has seen a large adenoma of this organ subside with great rapidity after removal of the large bowel. Typical symptoms of exophthalmic goitre of long standing, associated with intestinal stasis, have also rapidly and permanently disappeared. He states that the extraordinary improvement that results from short-circuiting and the disconnection or removal of the large bowel is due largely to the fact that the evacuation of the small intestine is facilitated by its introduction into the pelvic colon, and that the infection of its contents by organisms which grow in the stagnating material in the large intestine ceases abruptly. He does not believe that all absorption of toxins takes place from the stomach and small intestine. He does maintain that the tract other than the colon plays a very important part, he believes the more important part, in the process of absorption.

D. C. BALFOUR.

**Schachner: Experimental Anatomical and Physiological Observations Bearing upon the Total Extirpation of the Colon.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

In this paper, Schachner said that when we considered the arrangement by which 20 or more feet of small intestine were being supported through a peritoneal attachment measuring five inches, the weakness of the abdominal wall in the inguinal region, and the hernias that resulted from the gravitation of abdominal contents against this lowest and weakest point; when we compared the darkened lungs of the human subject with the clean, pink lungs of the quadruped living under the same condition, as a proof of how unequal the cilia were in their efforts to lift the dirt and bacteria-laden mucus against gravity; and when we watched the pathetic efforts of the tubercular subject to raise against gravity his expectoration,—then we got a full idea of the disadvantages of the upright position.



Arbuthnot Lane, through his work that extended over more than ten years, and especially his recent writings, together with Elias Metchnikoff, deserved the credit for calling the attention of the world to the injurious effects of intestinal stasis. While the end-to-end anastomosis was functionally the most natural, the end-to-side had the advantage of more security and practically the same advantages that applied to end-to-end. His experimental work justified him in believing that when an ileocectomy or ileosigmoidostomy was made by the lateral method, the intestinal contents did not pass through this opening as a rule, but continued the natural course through the colon provided no obstruction existed. In other words, it was a repetition of what occurred in the stomach after a gastro-enterostomy with a patulous pylorus.

The work of Metchnikoff plainly suggested the chemical side of the question, that is, the chemistry of the large intestine when its functions were for any length of time interfered with. The influence of an abnormally movable kidney as a factor in the development of splanchnoptosis had not received the attention it deserved.

Few of us perhaps realized that the retroperitoneal position of the kidney, when making excursions, enabled it to dissect loose through attrition the peritoneal attachment that served to anchor the viscera to the vertical column.

He wished to emphasize the point that the problem was comprehensive enough to accept all the assistance it could through gymnastics, bandages, regulation of diet and habits, and still furnish an abundant percentage of human wreckage for the surgeon to attempt to reclaim. E. S. TALBOT, JR.

**Long: Pseudoperitoneal Cauls of the Colon.**  
*Trans. South. Surg. & Gynec. Ass., Dec., 1912.*

By Surg., Gynec. & Obst.

The nomenclature of the subject was considered by Long, who analyzed the terms "adhesions," "membranous pericolicitis," "veils," "pseudomembranes," etc., which were ordinarily applied to the condition described. He showed that we often used very inexact terms in speaking of the membranous formations found about the colon. He proposed the term "pseudoperitoneal caul" as being descriptive and withal correct. Caul means a thin serous membrane, and was especially applied to peritoneal membranes as the layers forming the great omentum. The membranes in question were evidently of peritoneal origin, and by the testimony of the majority of writers they were a new formation, therefore "pseudo," hence the term "pseudoperitoneal caul of the colon."

There were four chronic conditions found in the right iliac fossa; namely: chronic appendicitis, Lane's kink, Jackson's membrane, and cæcum mobile, all of which had much in common as to etiology, pathology, and symptom-complex, and were difficult to differentiate clinically. Of this group the writer laid stress on the pseudoperitoneal

cauls of the colon, and believed them to be largely of infectious origin, though he did not deny the influence of developmental errors, splanchnoptosis, and intestinal stasis.

E. S. TALBOT, JR.

**Brown: The Value of Complete Physiological Rest of the Large Bowel in the Treatment of Certain Ulcerative and Obstructive Lesions of This Organ, with Description of Operative Technique and Report of Case.** *Trans. South. Surg. & Gynec. Ass., Dec., 1912.*

By Surg., Gynec. & Obst.

The advantages of complete physiological rest of the entire large bowel in treatment of certain diseases of this organ were strongly pointed out by Brown, who described a technique by which this rest could be accomplished in cases which heretofore had been treated by some surgical method. He explained how the rest could fulfill its purpose and the bowel be put back into commission in a manner both safe and satisfactory.

Through a right rectus incision sufficiently long for general exploratory purposes the abdomen was opened. The cæcum was at once sought and the large bowel was carefully examined from cæcum to sigmoid. All pericolic adhesions were then severed, the appendix removed, and the stump buried. The ileum was next severed, between two clamps, close to the ileo-cæcal valve. The distal ileum was tied off and buried, as was the appendix. At a suitable part of the cæcum a purse-string suture of linen was placed and the cæcum was next incised. Through this incision a large rubber catheter was inserted, after which the purse-string was tightly tied. A second purse-string of No. 1 chromic catgut was next placed. Under the loops of this purse-string three long catgut fixation sutures were placed. A stab wound was next made at McBurney's point, through which a forceps was inserted. The catheter and fixation sutures were grasped in the bite of this forceps and pulled through the stab wound. The peritoneal surfaces of the cæcum surrounding the catheter were next scarified and the catheter was pulled through the stab wound, carrying with it the three fixation sutures. The catheter was now slipped through the button and the fixation sutures were threaded through the eyes in the button and tightly tied, thus closely approximating the serous surfaces of the cæcum to the parietal peritoneum. A stiff rubber drainage tube was next inserted into the proximal ileum and fixed with a double purse-string suture. The ileum was now brought out at the lower angle of the rectus incision. The parietal peritoneum was made to hug it snugly by a few catgut sutures, and the abdominal wound was closed in the usual way. The indications for restoring the continuity of the large bowel were improvement of the patient's general condition and the return to normal of the discharge from the excluded large bowel, as shown after repeated chemical, microscopical, or cultured growth examination of irrigation fluids passed through it. This restoration should not be made too early, particularly in the



ulcerative lesions of the colon. When the surgeon deemed that the large bowel had sufficiently healed, and desired to put this organ back into commission, this restoration was readily done by simply cutting out the anus at the lower angle of the rectus incision, closing its end with a purse-string suture, making a lateral anastomosis of ileum to ascending colon or by switching the ileum into the sigmoid. He had never found any difficulty in restoring intestinal continuity. On the contrary, the operation was simple and easy.

This paper was based upon the experience he had gained from ten cases so operated. Two were cases of chronic intestinal stasis, with obstructions due to pericolic bands and flexures; both had greatly improved and were now comparatively well. Three operations were done for the relief of amœbic dysentery; all were cured. One was a case of ulcerative colitis with extensive involvement of the sigmoid and rectum; the patient was now in good health. One was a case of extensive obstructive tuberculous colitis. This patient received great relief from the operation and lived in comfort for two months. Three were for late and inoperable malignancies of the rectum. One lived six months, one five months, and the third case was still living, nine months after operation, comfortable and in reasonably good health, so there was no mortality in the series.

E. S. TALBOT, JR.

**Royster: Adhesion of the Sigmoid.** (With discussion.) *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912. By Surg., Gynec. & Obst.

In this paper, the author said that sigmoid adhesion was associated with definite symptoms which he believed could be relieved by simple means. Three years ago he directed attention to sigmoid adhesions as a cause of pain in many cases of salpingitis which were attributed to the ovary and other organs. Further experience and observation had convinced him not only of the importance of this adhesion, but of its more widespread interest, so that the whole question had assumed a broader aspect and was coming into consideration in every case of abdominal diagnosis that we had presented to us. Women commonly complained of left-sided pain, but it was not always properly interpreted. The ovary was too often blamed as the chief offender, when as a matter of fact there was very little pain associated with ovarian disease. Most often the tube was the source of the pain and usually preceded any ovarian involvement. In a number of instances neither the tube nor ovary was found involved, yet the woman had pain. The particular thing which was characteristic of sigmoid adhesion as observed clinically was, first, pain during defecation and not afterwards. In addition to this, some of the patients described a stoppage at certain points. Constipation was the rule, but in a few cases the condition was associated with mucous diarrhœa or a mucous discharge from the bowel. Usually the pain was low down in the left

iliac region, but it might be higher up, near the spleen or midway. Most of it was below the anterior spine of the ilium. A typical example of sigmoid adhesion was that of a married woman who had given birth to two or three children. She complained of incessant pain in the left quadrant of the abdomen, and was sent in as a case of tubal disease. Her greatest suffering was on going to stool. She was obstinately constipated. Pelvic examination was negative. Her abdomen was opened and a classic sigmoid adhesion revealed. This was dealt with and the abdomen closed. She had been free from pain now for more than two years. Other similar cases were cited.

In discussing Royster's paper, Hunner said the first of two or three cases he saw of this condition was operated more than once for pelvic and other conditions in the abdomen which might be imagined to be causing the real trouble, and finally these sigmoid adhesions were found and relieved, with recovery of the patient. As regards the etiology, some of these adhesions did not come from the large bowel, but from without to the sigmoid. He found in some of these cases that the adhesions ran from the internal inguinal opening over to the large bowel in the shape of fan-like peritoneal adhesions. In other words, the infection had apparently not come from the large bowel at all, but from the lymphatics running into the peritoneal cavity with the broad ligament. He found that in some cases chronic urethritis was associated with this condition of left-sided pain, but not all females with chronic urethritis who had pelvic pain had these adhesions.

Byford stated that in those cases in which the adhesions were not connected with the sigmoid he thought the pain was usually low down, extended off towards the false pelvis about the iliac region, and made it more or less a backache, whereas in the other class of cases the pain extended up along the colon, was apt to extend into the back and be more to the left side.

Moore said sigmoid adhesion was a definite surgical entity, and we could relieve it by surgical measures. In a certain number of cases there was a definite symptom which would enable one to make a positive diagnosis from the ordinary examination, and that was a sausage-shaped tumor extending up the left iliac region toward the splenic flexure.

Dickinson spoke of four types of immobilization of the sigmoid. One was the congenital type, where the attachment of the left adnexa to the sigmoid was rather closer than usual and interfered with its function. The second was the inflammatory type from the left adnexa. The third was one in which there were inflammations around the cæco-appendix which drew it over to the right and immobilized it. Fourth, he spoke of the type described by Royster. To him he had given a very perfect description of diverticulitis or multiple diverticula of the sigmoid.

E. S. TALBOT, JR



**Verhoogen and DeGrauwe: Cancer of the Rectum** (Sur le cancer du rectum). *J. méd. de Brux.*, 1912, xvii, 541. By Journal de Chirurgie.

The authors have operated 48 cases of cancer of the rectum, 40 of these occurring in the last five years. In these, they made an artificial iliac anus 6 times (2 deaths). In 34 cases they performed extirpation of the rectum with 6 immediate deaths, in which 4 had necrosis of the intestines with metastasis situated higher up. Fifteen patients were operated in private practice of Verhoogen. They are interesting from the point of view of post-operative history. Thirteen survived the operation. Six had recurrences between the sixth and the twelfth month. One died of pneumonia at the end of 6 months. One was lost sight of. Three had not had recurrence after 5, 3, and 2 years, respectively. Three cases are too recent to judge of the post-operative effects. In 9 cases there are 3 cures of some duration (33 per cent).

The operative technique followed by the authors is a resection of the ampulla of the rectum, very much like that employed by Depage. The patient is placed in a ventral position, a median incision is made from the anus to the coccyx, the ampulla is freed and extirpated, and the sectioned intestine above the point of the tumor is introduced through the sphincter, which has been denuded of its mucous membrane.

The authors, like most surgeons, enlarge upon the danger of gangrene of the newly formed rectum. They call to mind the anatomical findings of Südeck upon the vascularization of the rectum; but it seems, according to the recent researches of Veber, that this gangrene can result from infection, as gangrene has occurred when the ligature has been placed above the critical point of Südeck. Necrosis follows more easily in extensive cancers with infiltration of the mesocolon and in cancers situated higher up in the intestine. The authors have utilized the abdomino-coccygial route, following the technique of Goepel, which is already employed by Depage and Mayer.

PAUL MATHIEU.

**Hazen: A Method of Operation for the Radical Cure of Enteroptosis, with a Preliminary Case Report of 100 Per Cent Cured.** *Illinois M. J.*, 1912, xxii, 708. By Surg., Gynec. & Obst.

The essential supports of the colon are the firm attachments of the upper ends of the ascending and descending colon to the posterior abdominal wall. Imperfect fixation at these locations, usually from congenital failure in fusion, allows the vertical colons to drop and the transverse to sag. The author considers this the key to the production of enteroptosis and the rational point for its correction.

The operation consists in anchoring the vertical colons by obliterating their mesocolons. Running sutures are inserted, beginning at the edge of the bowel. To insure efficiency they must include all fibrous fasciculi in the mesocolon, which are abund-

ant at its upper extremity in these cases, and the perinephritic and lumbar fascias posteriorly. Undue relaxations of the transverse colon, abdominal wall, etc., are then treated by pexies, plications, omento-suspension, etc.

In six cases, all show complete symptomatic cure and perfect retention of the colon at the present time.

## LIVER, PANCREAS, AND SPLEEN

**Hellström: Spontaneous Recovery from Acute Suppurative Hepatitis Following Appendicitis** (Zur Spontanheilung der akuten eitrigen Hepatitis nach Appendicitis). *Beitr. z. klin. Chir.*, lxxx, No. 3. By Surg., Gynec. & Obst.

Tropical abscesses of the liver, because they are usually solitary, allow of a better prognosis than those which are secondary to infections of the bile tracts or appendicitis. The latter variety has generally been considered a fatal complication, and it was thought that there was no possibility of recovery without the aid of an operation, unless fortunately there was a spontaneous evacuation by way of a bronchus, or into the stomach or bowel, or through the skin. These abscesses are rarely solitary, but generally multiple, which minimizes the possibility of a spontaneous evacuation. However, experience has taught a number of observers that the prognosis in this class of cases is not necessarily so grave, and that cases of multiple abscesses not infrequently recover spontaneously. This has been the experience of Körte, Munroe, Langenbuch, Sonnenburg, Kelly, Jones, and others. Hitherto the reports in the literature of multiple liver abscesses showed that they almost invariably terminated fatally.

Hellström desires to add his experience and opinion, and agrees with the authors before mentioned that the prognosis is not of necessity such a bad one in cases of multiple abscess formation. He cites a number of cases from the literature, and adds several cases of his own which recovered. In some instances an exploratory laparotomy had made the diagnosis positive, and yet the patients recovered without any attempt having been made to evacuate the abscesses. This contribution establishes beyond dispute the fact that cases of multiple abscesses of the liver are by no means as fatal as was formerly thought, and that such cases not infrequently recover spontaneously without being operated. This favorable termination is the result of a diminishing virulence and final death of the pus organisms, with subsequent inspissation of the focus. All that is finally left is a mass of scar tissue, a fact which has been abundantly confirmed on the autopsy table.

WILLIAM HESSERT.

**Nesselrode: The Acute Appendicular Liver.** *J. Kansas M. Soc.*, 1912, xii, 461.

By Surg., Gynec. & Obst.

In this article the author chooses to classify those cases of chronic low grade biliary infections result-



ing in gallstones, complicating chronic appendicitis, as "the chronic appendicular liver," and under the head of "the acute appendicular liver" he discusses acute toxic hepatitis and suppurative hepatitis or thrombophlebitis of the portal vein, and reports two of his cases. One is a typical toxic hepatitis complicating acute appendicitis which cleared up promptly following appendectomy; the other, a case of multiple abscess of liver complicating an acute appendicitis. The second case died and the autopsy findings are reported. He concludes as follows:

It is well to remember that both these types of hepatic infections are always consecutive to the acute phase of appendicitis. The first usually has its onset during the second, third or fourth day of the attack; the second, anywhere from the fourth to the tenth day. In either case there is time, if the attack is recognized early, for surgery to intervene and save the liver such an attack. Hepatic infection is one of the most terrible complications of appendicitis, and if these cases are to be saved the appendix must be removed before such an infection takes place, for we are powerless to avert the evil once it has established itself. Every practitioner of medicine should have this danger thoroughly in his mind before he advises any patient to await an interval operation for appendicitis.

**Norris, Talley, and Carr: Solitary Cysts of the Liver.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.  
By Surg., Gynec. & Obst.

Under this topic Norris reviewed the literature of these cysts and reported a case. Talley also reported a case, which was that of a large cyst of the uterus, and reviewed the literature on the subject. Carr described an operation for flat-foot which was the result of traumatism.

E. S. TALBOT, JR.

**Lapage: Primary Carcinoma of the Liver in a Boy Aged Six Years.** *Proc. Roy. Soc. M.*, 1912, vi, 45.  
By Surg., Gynec. & Obst.

The enlargement of the liver was first noticed after an attack of scarlet fever with nephritis. The liver was enlarged and showed several rounded prominences. The abdominal veins were enlarged and there was ascites; no jaundice. At post-mortem the liver weighed six pounds. There was metastasis in the lung.

C. G. GRULEE.

**Langmead: Congenital Adenoma of the Liver.** *Proc. Roy. Soc. M.*, 1912, vi, 46.  
By Surg., Gynec. & Obst.

This occurred in a baby five weeks of age who died in convulsions. There were no symptoms previous to this time. The liver was found slightly enlarged and fatty, and eight pearly white tumors were discovered. They were clearly defined but not encapsulated. The largest was the size of a marble.

C. G. GRULEE.

**LePlay and Ameuille: Experimental Researches on the Relation Between the Liver, Spleen and Omentum** (*Recherches expérimentales sur quelques relations entre le foie, la rate et le grand épiploon*). *Compt.-rend. d. l. Soc. d. Biol.*, 1912, xiii, 682.  
By Journal de Chirurgie.

The authors give the results of their researches on certain relations between the liver, spleen and omentum. To show these relations they have performed a series of experiments.

Series 1. The pedicle of the spleen was ligated, while the omentum was left intact. Careful observations in experiments on animals showed that, after first losing weight, this was regained. The spleen, after 45 hours, presented necrotic lesions, but at the end of 20 days these were replaced by grayish diffuent masses, while the great omentum, engorged with blood, was the seat of an intense diapedesis which perhaps favored the splenic autolysis. Alterations in the liver only began at the end of 8 days and were completed after 3 weeks. They consisted of a perforative hepatic congestion, of nodular infiltration of lymphocytes and macrophages in the portal spaces, and of little hæmorrhagic interstitial suffusions which were perhaps, according to the authors, products of autolytic origin.

Series 2. Splenic ligature with resection of the great omentum. In animal experiments, marked loss of weight occurred and death followed in 25 to 35 days. The spleen rapidly presented autolytic phenomena. At the end of three weeks the liver was the seat of cirrhotic lesions progressing toward organization.

Series 3. The spleen alone was extirpated. In this series no modification of the liver was observed, except for a slight periportal infiltration. The bile was very poor in pigments.

Series 4. Injections of splenic extract. Under the influence of repeated injections, large splenocystic cells filled with iron pigment appeared at the end of six weeks. The splenic capillaries were gorged with blood. The spleen was very congested and hypertrophied.

The effects produced on the liver were analogous to those that are observed after ligation of the splenic pedicle with resection of the omentum.

The authors conclude that the spleen, by the products of its cytotoxicity obtained by autolysis, or by the method of extracts, exerts with the liver a manifest influence which produced a reaction in the connective tissue. This influence is more or less limited, if the great omentum is intact, through the defensive action which this organ exerts, in the abdominal cavity.

PIERRE CRUET.

**Leriche and Cotte: Cholecystectomy in the Acute Stage of Cholecystitis** (*De la cholécystectomie à chaud dans les cholécystites aiguës calculeuses*). *Rev. d. Chir.*, 1912, xlvii, 869.

By Journal de Chirurgie.

The same arguments which are used in favor of appendectomy during the acute stage of appendicitis



may, according to the authors, be advanced to warrant cholecystectomy in acute cholecystitis.

Various forms of cholecystitis exist. In suppurative cholecystitis the walls of the gall-bladder are thickened and are often adherent to neighboring viscera, while ulcerations (such as are most common about a calculus in the cystic duct) lead to danger of perforation. Hemorrhagic cholecystitis is characterized by a sanguinous infiltration of the wall. The phlegmonous form is usually a sequela of an acute cholecystitis in which expectant treatment has been followed. The gangrenous variety apparently depends here, as elsewhere, upon the virulence of the infection.

In well-determined gallstone cases, the appearance of signs of localized infection accompanied by peritoneal reaction is a positive indication for operation. There is everything to gain here by operation, for though some cases of acute cholecystitis may get well under medical treatment, the delay exposes the patient to the danger of complications such as biliary phlegmon, hepatic suppuration, pyelo-phlebitis, subphrenic abscess, empyema and septicæmias of varying gravity.

The authors consider that cholecystectomy is greatly to be preferred to cholecystostomy. The latter often leaves an infected area, with ulcerations which may perforate even after the operation. This operation, therefore, is only to be performed in cases where cholecystectomy proves impossible. Cholecystectomy is the more easily carried out, the earlier the operation is undertaken. If the gall-bladder region is free from adhesions, the cystic duct is first severed and the gall-bladder removed by dissection, starting at the outlet and proceeding toward the fundus. But if there is a local peritonitis the adhesions may necessitate the reverse of this procedure. Leriche and Cotte have added 30 personal cases of cholelithiasis to those collected in the statistics of Körte, Kümmel, Libenthal, Draun, Trendelenburg, and Plöfeneister. In these 30 cases there were 7 of acute cholecystitis. Six were operated in the acute stage. All were cured. J. OKINCZYC.

**Johansson: Biliary Perihepatitis, with Effusion of Bile into the Peritoneal Cavity without Perforation of the Biliary Tract** (Contribution à l'étude de la périhépatite bilieuse avec épanchement biliaire dans le péritoine sans perforation de l'appareil biliaire). *Rev. d. Chir.*, 1912, xlv, 892.

By Journal de Chirurgie.

Since Clairmont and Haberer reported the first case, in 1910, it has been experimentally demonstrated that effusions of bile into the peritoneal cavity may occur without perforation of the biliary tract. Three new cases have since been reported, one by Schievelbein and two by Doberauer.

Johansson reports a case of a woman 76 years old, in ill health, who in January, 1912, had a severe attack of abdominal pain localized chiefly on the right side. The diagnosis of appendicitis was made. There was a history of a similar attack a year earlier. At operation, the peritoneal tissues

were found to be yellow in color, and when the peritoneum was incised a moderate quantity of free fluid of yellowish tint was found throughout the cavity. The appendix was normal. The gall-bladder and bile duct showed no sign of perforation. Cholecystectomy was performed. The patient died on the sixth day. At autopsy, absence of any perforation was confirmed. The author considers that alteration of the wall of the gall-bladder by infection, and perhaps the chemical composition of the bile, are factors in the production of this transudation. J. OKINCZYC.

**Fowler: Inflammatory Hyperplasia of the Spleen.**

*Am. J. Surg.*, 1912, xxvi, 417.

By Surg., Gynec. & Obst.

This paper is limited to primary hyperplasia of the spleen amenable to surgical treatment. It includes the idiopathic enlargements of splenic anæmia. Synonyms are splenic pseudoleukæmia and primary splenomegaly. Banti first described the condition. It is understood that Banti's disease is that form of splenic enlargement associated with cirrhosis, ascites and jaundice.

Inflammatory hyperplasia is diffuse or nodular. Three types are distinguished. The ordinary type represents the enlargements grouped clinically under splenic anæmia. Intermediate types are the Gaucher (endothelial) type and the nodular hyperplasia. These are processes which present neoplastic tendencies. In the first type, Banti draws attention to the thickening of the reticulum and to endophlebitis of the splenic, portal and mesenteric veins.

Splenomegaly of the endothelial type was first described by Gaucher under the title of "primary epithelioma of the spleen." The essential feature is the transformation of the splenic parenchyma into spaces arranged in an alveolar manner containing large cells possessing a peculiar morphology. The liver and lymphatic glands may show a similar collection of cells replacing the normal structure. In 1892 Gaucher modified his description and stated that the cells under consideration are of connective tissue and not epithelial origin.

Regarding the pathogenesis of the endothelial type, Schlagenhauer maintained that there was no resemblance between the proliferated cells and the endothelia of the vascular sinuses. He attributes the condition to the proliferation of reticular tissue in the hæmatopoietic organs, and regards it as systemic, involving the lymphatic and blood-forming organs, and due to an unknown but probably toxic agent.

In the gross the nodular hyperplasia exhibits more marked neoplastic properties. It is particularly with the endothelial type of sarcoma that this class has been confused.

**Council: Primary Sarcoma of the Spleen.** *Ann.*

*Surg.*, Phila., 1912, lvi, 915.

By Surg., Gynec. & Obst.

This case makes a total of five cases of sarcoma of the spleen to be found in the literature since the



report in 1904 of 32 cases. Of the 16 splenectomies and one enucleation, pain is mentioned in only 8 and a tumor described in 15. Injury as a possible etiological factor is recorded in only 3 instances, and malaria in only 2. Blood findings are generally considered to be non-diagnostic.

**Classification.** One endothelial sarcoma or round cell sarcoma, one large cell sarcoma, one mixed cell sarcoma, two fibrosarcomata, five lymphosarcomata, and six round cell sarcomata.

After the enucleation, this patient lived seven days. After splenectomies, in the other recorded cases, 3 died early, 5 died of recurrence after indefinite periods, and 7 were well after periods varying from four months to six and a half years.

A mixed cell sarcoma of the spleen occurred in the service of Dr. Hugh H. Trout in 1911, in a man of 58, who for ten or twelve years had suffered severe attacks of abdominal pain. There was a maternal history of carcinoma. The patient gave a lifelong history of alcoholism and morphinism. He had had a traumatism of the abdominal wall with severe pain years ago. Emaciation, peripheral arteriosclerosis, and a mass in the left hypochondrium. W. B. C. 20,200; differential non-indicative. The spleen was practically replaced by a growth of 600 gm., which was removed, and a mixed cell sarcoma was found upon examination. An uneventful, convalescence followed, with a gain of 35 pounds in six months.

**Charrier and Bardon: Splenectomy for Laceration of the Spleen** (Une splénectomie pour déchirure de la rate). *Arch. prov. de Chir.*, 1912, xxi, 689. By Journal de Chirurgie.

Charrier and Bardon report the case of a young man of 18 years, who was brought into the hospital 16 hours after an accident in which a wagon wheel had passed over his abdomen. He complained of pain on the left side of the abdomen and great thirst. He had not vomited, and urination was normal. On examination he was found to be very pale and dyspnoeic; pulse 140, temperature 98.8°. The abdomen was tense, rigid, and painful throughout, but more markedly so on the left side. The abdominal tympany had encroached on the hepatic dullness. There was some dullness in the iliac region. A median epigastric incision was made, and upon opening the peritoneum a large quantity of blood and clots gushed out, followed by the distended stomach and intestinal loops. The intestinal tract was normal, but the spleen was found to be lacerated. A second incision, at right angles to the first, was now made, extending from the midline to the left costal margin. Splenectomy proved difficult because of the extreme intestinal distention. The pedicle was ligated, drainage instituted, and the incisions closed with through-and-through silver wire sutures. The post-operative condition was very alarming, and it was necessary to use injections of serum, camphorated oil, spartein and strychnin to combat shock. Recovery followed.

This was the twenty-fifth case of splenectomy for rupture of a normal spleen which had been performed in France. The authors believe that splenectomy in this condition must remain the treatment of choice in cases of severe laceration where repair is not possible. **GEORGES LABEY.**

**Gwathmey: Pancreatic Cysts.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

Gwathmey reported a case of cyst of the pancreas, and said the fluid content from the large cyst showed considerable detritus, a few degenerated epithelial cells and leucocytes, but no cholesterol crystals. The small cyst showed a few degenerated epithelial cells. Attempts to cultivate the organism from the cyst contents were futile. The cyst presented one or two interesting features. The fluid in the large cyst was entirely different from that in the smaller cysts, the difference being due to a hæmorrhage or hæmorrhages that took place in the large cyst. The smaller cysts were lined with epithelium, while in the large cyst not a vestige of epithelium could be found. The large cyst was evidently lined with epithelium, but this epithelium must have suffered autodigestion. A hæmorrhage or hæmorrhages took place in the large cyst, which caused the difference in the cyst contents and which produced some trauma to the epithelium of the cyst wall, thereby allowing the ferments in the cyst contents to digest the epithelial lining.

So lax was the abdominal wall after the removal of the tumor that the appendix was removed without difficulty through the same incision. It contained an extremely large appendolith in the tip and was actively inflamed. Old and fresh adhesions in the pelvis were broken up, adherent coils of small intestine removed from the cul-de-sac, and sigmoid properly placed in the pelvis. The kidneys, liver, gall-bladder and ducts, the pancreatic head, and other abdominal organs were found normal. The wound was closed without drainage. The convalescence was smooth and uneventful, and the patient left the hospital in nineteen days to go to her home in Chicago. A recent letter, six months since her operation, reported her in excellent health.

Hall said that several years ago he reported to the association an operation for pancreatic cyst. In that case the cyst evidently arose from trauma. The man was lifting and injured himself. He came to be operated upon five or six months after injury, with an enormous tumor in his abdomen, which held more than two and a half gallons of fluid. He simply drained the cyst and stitched it to the abdominal wall. The man died from inanition the seventeenth day after the operation. **E. S. TALBOT, JR.**

#### MISCELLANEOUS

**Kanavel: The Abdominal Crisis.** *Illinois M. J.*, 1912, xxii, 718.

By Surg., Gynec. & Obst.

The author urges the advisability of grouping the acute abdominal diseases into two classes, one



medical and the other surgical, and basing the treatment upon this diagnosis rather than waiting for the specific diagnosis of appendicitis, intestinal obstruction, etc. He draws attention to the fact that in the early hours the surgical conditions are all characterized by the same signs and symptoms, as follows: First, sudden excruciating pain in some part of the abdomen; second, nausea and vomiting; third, rigidity of one or both sides of the abdominal wall; fourth, tenderness at least relatively localized.

If all these are present a positive diagnosis may

be made, while a probable diagnosis may be made upon any three if the character of their onset and their course are investigated discriminatively.

The author then discusses each of these symptoms in detail. It is suggested that this group of signs and symptoms should be held to indicate a clinical entity and enable the surgeon to operate under the diagnosis of an acute surgical abdominal crisis, without waiting for the specific diagnosis as to which organ is affected, to the end that early operation may be performed, and consequently many lives saved.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, ETC.

**Ponomareff: The Treatment of Infected Injuries of the Knee Joint with Bier's Hyperæmia.**  
*Beitr. z. klin. Chir.*, 1912, lxxii, 131.

By Surg., Gynec. & Obst.

Many methods of treatment have been advocated for injuries of the knee joint complicated by infection. Among these may be mentioned incision with the introduction of antiseptics, aspiration and injection, drainage, and even resection. Favorable results from the use of Bier's hyperæmia in suppurations of the knee joint have been reported by several observers. Ponomareff reports 54 cases of injured knee joints, which he divides into three groups. The first group includes four cases with perforation of the joint but without symptoms. The second includes all cases accompanied by severe pain, in some of which the presence of an exudate could be determined in the joint. The third embraces the severest cases, with a large exudate, marked sensitiveness, and disturbance of function.

The character of the infection was determined by examining the wound secretion or puncturing the joint. The staphylococcus aureus was the most common organism present. Occasionally the streptococcus was found. In all cases with marked symptoms of joint infection, passive hyperæmia was used therapeutically. A Martin's rubber binder was applied to the upper part of the thigh for 18 to 20 hours daily, and after removal the leg was elevated. Tamponade or drainage was avoided wherever possible. Only when a suppurative arthritis was present was the joint cavity drained. The wound in each case was cleansed with alcohol and painted with tincture of iodine, and a dry aseptic bandage applied. Sounding or probing the wound to find if it extended into the joint was discarded as a dangerous procedure.

In Group 1, 2 cases were healed by hyperæmia and immobilization. In one case immobilization alone gave the same result. In another case suppuration developed after immobilization, and tamponade and ankylosis was the end result.

In Group 2, immobilization and hyperæmia resulted in a complete cure in 7 cases. In 4 cases

slight restriction of motion remained. Nine cases were cured by immobilization alone. One case died of sepsis.

In Group 3, 12 cases were treated with hyperæmia and immobilization. Five had complete restoration of function, 3 had restricted motion in the joint, 2 resulted in ankylosis, and 2 ended fatally.

In all cases in which passive hyperæmia did not give good results, the limb was immobilized, the joint was opened, and the intra-articular as well as the peri-articular pus was evacuated.

Ponomareff concludes that passive hyperæmia according to Bier's method is not sufficient in itself in the treatment of injuries of the knee joint. Every case in which suppuration sets in should be treated by immobilization alone or in conjunction with hyperæmia. When hyperæmia is used the opening of the joint and the incision of periarticular abscesses should not be neglected. Passive movements are used only when the inflammatory phenomena have subsided. Especial care is necessary, when long-continued periarticular suppurations have been overcome. Too early application of passive movements frequently leads to an exacerbation of the infection.

ERWIN P. ZEISLER.

**Stumm: Multiple Myeloma.** *Surg., Gynec. & Obst.*, 1912, xv, 653.

By Surg., Gynec. & Obst.

The rather rare condition of multiple myeloma is discussed in this paper, and two very typical cases are reported at some length, both clinically and pathologically. It is noted from a study of these cases, as well as the cases reported in literature, that the individual cells are fairly uniform in appearance and, as is quoted from Christian, the "individual cases show no greater variation than occurs in other tumor growths."

The nature of the cells is not known, though there has been a great deal of study and controversy regarding it. Some regard them as a bone marrow plasma cell, others as a myelocyte, and some again as erythroblastic in origin. The gross appearance of the bone is rather characteristic, though a great many other pathologic bone conditions have been confused with that of multiple myeloma. The ribs, sternum, vertebrae, and less frequently the skull



and some other bones, are involved. Tumor masses may or may not be present. The bones become very brittle, there being a thin crust of bony substance remaining externally which is easily crushed; internally the substance is yellowish gray or reddish gray in color. Frequently this is mottled, the areas varying in size from a split pea to a dollar. Usually there are very many thin walled blood-vessels, with only an endothelial layer present. A very fine reticular fibrous framework is present. In many of the cases there is a peculiar substance present in the urine known as the Bence-Jones body. This is not constant, and when it is found is not absolutely pathognomonic, though its presence is always extremely suspicious.

The author did not recognize clinically the first case reported, never having before seen the condition, and it was only by study of the pathologic condition that he was able to identify the nature of it. The second case was readily recognized clinically, and he is of the opinion that, once having had the condition in mind, with a fairly clear understanding of its pathology, the cases should not be difficult of clinical recognition.

**Haun: The Treatment of Phlegmon of the Upper Extremity** (Ueber Phlegmonen behandlung der oberen Extremität). *München. med. Wchnschr.*, 1912, lix, No. 53. By Surg., Gynec. & Obst.

Instead of a circumcision of the upper extremity proximal to the phlegmon, as advised by Nosske, the author recommends a method which has given him good results for 15 years. Proximal to the phlegmon, three to five longitudinal and parallel incisions, 5 cm. long, are made down to the fascia; the skin from one incision to the other is bluntly undermined, and under these bridges of skin iodoform wicks are inserted. In this way a broad ring is established in which the lymph vessels are open and in which the phlegmon never transgresses. A thick ring of collodium is made above the incisions. The operation can be done with local anæsthesia, is easy, and leaves no disturbing scars. HELIODOR SCHILLER.

## FRACTURES AND DISLOCATIONS

**Jones: Present Position of Treatment of Fractures.** *Brit. M. J.*, 1912, ii, 1589.

By Surg., Gynec. & Obst.

Jones states that, as an orthopedic surgeon, he has been led to regard fractures as potential deformities, and in many instances his treatment is modified from the accepted methods to anticipate and prevent subsequent impairment of function. In other cases he lays stress on certain measures of after treatment. In a small minority of fractures he obtains better results by immediate operation. Certain types of fractures are taken up in more or less detail, and the author's treatment is indicated. The essential point is that correct alignment be secured. This may be secured by the most primitive means, and assures a good functional result even if

there be overlapping of the fragments. He designates angular deformities as a disgrace to surgery. The question of extension by weight and pulley is discussed. In his hands steady extension by the use of the Thomas knee splint has overcome shortening and has lined up fragments in femur cases where it had seemed impossible.

The author's paper is partly taken up with a discussion of the report on fractures by the British Medical Association. In speaking of the bad results following Pott's fracture he emphasizes the necessity of overcoming well the valgoid tendency and the essential after treatment by aid of an outside iron upright, inside T strap, and the raised inner side of the sole of the shoe. Fractures of the elbow should be treated by acute flexion. The general tone of the paper is to encourage surgeons to mechanical ingenuity in the treatment of fractures, as a result of which fewer operations will be necessary.

M. S. HENDERSON.

**Caldwell: Fractures into and about Joints.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

In this paper, Caldwell stated that the subject of fractures was too perfunctorily taught. A clearer understanding of their nature and complications would bring about better results and obviate many law suits. Fractures into and about joints required more discriminating diagnosis and treatment than the average fracture of the shafts of long bones. Crepitus was valuable, and its absence significant. Perfect apposition of fragments was of more consequence in proximity to joints.

The author considered fractures about the shoulder, and said that fractures of the anatomical neck were rare. In fracture dislocations, there was necessity for the removal of the head where reduction could not be accomplished. He pointed out the indications for operation, as well as contraindications, in fractures of the surgical neck. He likewise discussed the indications for operations in fractures about the elbow, mentioned the varieties, the diagnosis, and manner of reduction. He also discussed the treatment of fractures at the hip and about the knee, as well as fractures about the ankle and their varieties and complications.

In discussion, Winslow reported that he had had a number of cases of fracture of the surgical neck of the humerus, and he had found it impossible in some cases to effect reduction until the arm was drawn into a position of extension and the bones held together by means of screws, and he had had some good results by that method.

Law stated that in the University of Minnesota they had a different procedure from that mentioned, and their results had been different from those related by Winslow. They resorted to the treatment suggested by Maxwell and Ruth in old people, rather than let them be up and about, with the prospect of a deformed joint and a lack of function of the joint. One woman 87 years of age, and another 92,



had functioning joints and union by following the Maxwell-Ruth method. This method in old people was attended with uniformly good results.

Morris said that in cases in which we did not wish to do an open operation we could often, in selected cases, do a simple operation. First, put the limb behind the fluoroscope. Second, run a narrow-bladed knife down near the fracture. Third, put in a cannula. Fourth, run a drill through the cannula, and transfix both fragments. Fifth, run in a silver pin and leave it there, taking everything else out. One could pin a whole lot of fractures behind the fluoroscope with the patients under the influence of cocaine. This method did away with the disadvantage of keeping these patients in bed. In many cases of fractures in joints, one could put in a pin and do a simple operation. E. S. TALBOT, JR.

**Pretoff: Fracture of the Lower End of the Radius in Children** (Les fractures de l'extrémité inférieure du radius chez l'enfant). *Rev. méd. d. l. Suisse Romande*, 1912, xxxii, 729. By *Journal de Chirurgie*.

Mme. Pretoff reports 14 cases of fracture of the lower end of the radius in children in Vulliet's clinic. Her conclusions are as follows: This fracture is not at all rare in children, and while not as typical as the same fracture in adults, it still shows sufficiently well marked characteristics to merit description. Mme. Pretoff claims that, contrary to what has usually been held, the line of fracture very rarely follows the epiphyseal line. The prognosis is always good.

PAUL MATHIEU.

**McCurdy: New Transpelvic Lines for Determining Displacement at the Hip.** *Internal. J. Surg.*, 1912, xxv, 373. By *Surg., Gynec. & Obst.*

McCurdy, questioning the accuracy of Nelaton's line in locating the trochanter, describes and illustrates a transpelvic line that crosses the pelvis through the spines of the pubic bones at right angles to the median line, the umbilicus serving as the vertical of the triangle. This line extends outward across the hip joints, passing over or above the trochanteric eminences where the heads of the femurs are in the acetabulum and no fracture of the neck or displacements of the femur exist. He has examined several hundred patients by this new method, and was able to decide almost instantly whether displacement at the hip joint existed. The method is easily applied to patients of all ages, particularly so when the patient is lying on the back, a position in which Nelaton's line is not so readily applied. In order to verify the conclusion found by his method as described, a tape measure, ruler or string is passed over the pelvis so that the ends pass the trochanteric eminences, and are held in this position by the assistant, or a line may be made across the abdomen from one trochanter to the other. Care must be taken that the most prominent points of the trochanter are found. The anterior superior iliac spines are now located and marked, or a line may be made across the pelvis over the spines

if desired. If these lines are parallel, no displacement at the hip joint occurs. If, however, the lines converge, displacement of some sort will be found on the side where they are closer. The amount of displacement is now determined from the spines to the point from the trochanteric line immediately below. He points out that in every case where measurements are made without regard to the angle of the femur to the pelvis, error must follow. The amount depends entirely upon the amount of flexion and adduction or other angular variations. In a study on disarticulated skeletons he finds that the relationship existing between the femur and pelvis makes it possible to increase the distance from the anterior superior spine to the internal condyle two inches, while the arch through which the femur passes is no greater than that found in many cases of deformity at this joint. He then outlines his methods. H. B. THOMAS.

**Shands: Treatment of Fractures of the Shaft of the Femur.** *Va. M. Semi-Monthly*, 1912, xvii, 445. By *Surg., Gynec. & Obst.*

The author is fully convinced that very few cases, if any, should recover with shortened limbs now that the X-ray can show accurately whether the fracture has been reduced. The surgeon should never be satisfied until the fragments of bone have been replaced in the position in which they were before the fracture. The author uses a traction apparatus with the patient under ether to reduce the fracture, and while the traction is maintained a plaster of Paris spica extended from the nipples to the toes is applied. If the X-ray shows after this has been done that the fragments of bone are not in a perfectly satisfactory position, an open operation is done and the bones are anchored in the best possible position. The author's experience has been that about one case in four has to be operated on. He has practiced this method to the exclusion of all others for the past 18 years with perfectly satisfactory results. The method is as applicable to children as to adults.

The author has found that patients treated in this way are far more comfortable than in any extension or traction apparatus, as they can be handled with perfect comfort, and be removed to a rolling chair; children even get about well on crutches without harm.

**Estes: Report of the Commission of the Medical Society of Pennsylvania on End Results of Fractures of the Femur.** *Internal. J. Surg.*, 1912, xxv, 382. By *Surg., Gynec. & Obst.*

The report of Estes, chairman of the committee, considers the total number of 788 cases with reference to age, occupation, cause, seat and kind of fracture, amount of shortening, method of treatment, etc., and concludes that an analysis of the cases shows that the greatest number of fractures occur in patients between 20 and 50 years of age. The next largest number is under 10 years of age, and the third largest number from 10 to 20 years.



Working people are far more subject to these fractures than any other class, and indirect violence causes about five times as many cases as direct violence. He contends that the open method cannot be recommended as a routine practice, and that it should never be used except by men who are thoroughly qualified and with proper surroundings—surroundings where the proper instruments may be had and where the proper operating-room facilities and training will insure thorough aseptic technique. He believes that the complete reports serve to indicate that this most important fracture and serious injury, in hospitals at least, does not receive the attention of the chief surgeon, treatment being delegated to the interne staff. He recommends the proper use of the X-ray and believes traction is most commonly employed. The results of such treatment in most instances enable the patient to resume his occupation and function without serious detriment, although absolute apposition and restoration of the proper axis of the bone are very seldom accomplished. Deaths from simple fractures of the femur are noted in 3.69 per cent of the cases. The reports show that they occur almost wholly in cases of old age, from shock and exhaustion, from pneumonia, or from some operative interference. He thinks it is evident that the open method itself introduces into the treatment of these cases such a marked element of danger that it cannot be recommended for general use nor recognized as a routine practice. As in everything else, the method must be adapted to the case and not the case to the method.

Although he considers plaster of Paris a valuable means of treating these fractures he believes it should be applied only under anæsthesia, and believes the results may be considered good if the measurements show no more than an inch of shortening, providing there is no inversion or eversion of the foot from angulation of the fragments.

H. B. THOMAS.

**Nouel: Old Dislocations of the Semilunar Bone**  
(Des luxations anciennes du semi-lunaire). *Thèse de Paris*, 1912, Nov. By *Journal de Chirurgie*.

A dislocation is old when the anatomical changes have become such that the ordinary procedures for reduction fail or are contraindicated, and this appears to Nouel to be from three weeks to one month after the traumatism.

The author fully agrees with the theory of Delbet and, after reviewing the pathological anatomy of recent dislocations, reports two new observations with radiographs. In the first case the radius was dislocated behind the semilunar, while in the other there was a dislocation accompanied by enucleation of the semilunar.

He also analyses the more complex forms of dislocations, such as that complicated by dislocation of the scaphoid or with displacement of the semilunar backward (case of Gouilloud, of Durand), or with fracture of the scaphoid, fracture of the radius or the cubitus.

In old dislocations the cartilaginous end of the radius frequently shows erosions which may be due to friction or rough irregular fragments of the fractured scaphoid. The styloid of the radius forced outward often shows an irregular surface finely mamelonated or covered partially by fibrous tissue.

There is often lack of solidification of fractured bones; they are never firmly knitted and require several months to heal. Sometimes there is an abnormal union between the radius and a carpal bone, giving rise to an ankylosis. The author calls attention to a traumatic osteotrophy where the decalcification is intense. This coincides with the description by Mocquot of osseous neoformations and hyperostoses.

The cut and torn ligaments form a mass of fibrous tissue poorly differentiated, covering the semilunar and interposed between the bones, and uniting with them to form a fibrous mass which gives a shadow on the X-ray plate. The ends of the carpal bones and the semilunar are shortened. The denuded articular surfaces are diminished in extent.

The nerves may be raised and flattened by a dislocation of the semilunar forward, and may subsequently give rise to a mild neuritis. The nerves may be compressed by a collar of connective tissue.

In simple dislocations in which the semilunar is not enucleated, there is a thickening of the wrist antero-posteriorly, lower than in fracture of the lower end of the radius. The altered position of the scaphoid and semilunar may be felt by palpation. When the semilunar is enucleated it is easily felt under the skin; the antero-posterior thickening is less marked but the lateral displacement is often greater. The flexor tendons are raised and stretched over the ridge formed by the semilunar, which moves under the finger like a marble. A hard, raised lump is constant. Motion of the hand is limited, with marked decrease in the grasp of the hand. Compression of the nerves is so common that it is almost a symptom; the median is most often involved and sometimes the ulna. Frequently there is a neuritis with lancinating pains, or changes in sensibility; at times complete anæsthesia, or motor symptoms, contractures, or trophic changes.

In dislocations complicated by fracture of the scaphoid the anatomical snuffbox is filled by the scaphoid dislocated backward. There is a swelling of the region which prolongs the radial gutter under the heel of the hand between the long abductor of the thumb and the palmaris longus.

Old fractures are easily diagnosed, and it is hardly possible to confuse them with sprains, dislocations of carpals, fractures of the radius, or isolated fractures of the scaphoid. X-rays should always be used.

The indications for operation, according to the author are almost absolute. The method of choice is extirpation of the semilunar with the fragment of the scaphoid, if this is fractured, through a frontal incision. The results are excellent. Prognosis depends upon concomitant lesions of the carpal,



especially traumatic osteo-arthritis and osteitis rareficans, when a resection should be done. This is, however, very rare.

L. CAPETTE.

### SURGERY OF THE BONES, JOINTS, ETC.

**Fay: Transplantation of the Fibula at the Resection of Long Bones** (La transplantation restauratrice du péroné après les résections des os longs du membre supérieur pour ostéo-sarcome). *Thèse de Paris*, 1912, Nov. By Journal de Chirurgie.

Fey favors conservative treatment of osteosarcoma. He quotes the work of Gangolphe and his followers, and of Huguier, and agrees with them as to the advantages of periosteal resection in amputations and disarticulations. He discusses the indication furnished by the site and character of the tumor, and the condition of the neighboring tissues.

The reconstitution of continuity after resection is best accomplished, according to the author, by means of an autoplasmic osseous graft. This is the quickest and simplest method; it is always possible of accomplishment, and gives the best results. The fibula offers the advantages of an easily accessible long bone of sufficient solidity which may be removed whole, hence with intact marrow and periosteal covering, without its loss causing any serious consequences. If at least 6 cm. of the lower end of the bone remain, the only effect of the removal of the upper portion is a slight relaxation of the tibio-tarsal articulation, which is easily remedied by suitable ankle support. Whatever may be the histological changes occurring in the transplanted bone, the clinical results show plainly that it satisfactorily fulfills its mechanical function of support.

The author describes the technique used by Gangolphe in the resection of the different bones of the upper extremities in cases of osteosarcoma. He lays stress upon the necessity of removing the tumor, the adjacent tissues, and any parts which appear involved, in one single piece. The excision of the fibula is carried out after the resection of the neoplasm. The length of the graft must be longer than that of the resected fragment, and it should be taken from the middle portion of the fibula. A vertical incision is made which lays bare the peroneal muscles. These are then dissected off the bone, care being taken not to graze the latter. Ollier's resection probe is then pushed behind the bone through the interosseous membrane, and a Gigli saw then placed in position. After section of the bone, the interosseous membrane is incised and the insertions of the posterior muscle dissected off. The bone graft is wrapped in compresses moistened with warm serum. Hemostasis is carried out and the wound closed with a drain. The two ends of the bone graft are then shaped to a point with a bone forceps and the marrow cavity of the resected bone widened by the use of a conical burr. The ends of

the graft are then fitted into the cavities, the result being a dovetailing of the graft into the defect in the resected bone. In the forearm, where the medullary cavities are small, it is better to use a suture at the two ends.

If the resection involves an epiphysis, the superior articular surface of the fibula must be included in the portion excised. In this case care must be taken to avoid damage to the external popliteal nerve or its branches. The external lateral ligament and the tendon of the biceps femoralis are dissected off subperiosteally. After the implantation of the graft the wound is closed, with drainage, and the limb placed in a previously prepared plaster molded splint, in which it remains for six weeks. Some form of external support should be used for several months more.

Fey cites a case of his own. A woman of 29 years felt a sharp pain in the middle portion of the left humerus at a moment when the arm was under strain. A few hours later she noticed a small swelling about the size of a pigeon's egg at this point. The pain lasted for only a few days, though later it would be brought on by any sudden movement; but the tumor increased in size and a year later was the size of an orange. It was situated on the anterior and external aspect of the arm. It was hard and did not pulsate; there was no detectable glandular involvement.

A tourniquet was placed about the upper portion of the arm, and a vertical incision made distal to it from the lateral epicondyle to within 5 cm. of the acromion. The radial nerve was found and retracted. The brachial artery biceps and the median nerve were retracted medianward. Three cm. above the tumor and 4.1 cm. below the tumor the shaft was freed from muscular insertions and sawed through. The fibers of the triceps were dissected off the posterior aspect, a good exposure being obtained by pushing the lower fragments outward. The resected fragments, which contained the tumor, and the brachial muscle, which lay on its anterior surface, were removed en bloc. A segment 15 cm. in length was then excised from the shaft of the fibula and dovetailed into the defect in the humerus. After treatment as above.

There was a complete radial paralysis of seven months' duration, due to the fact that this nerve had been momentarily compressed between the graft and the humerus. Normal healing. At the end of seven months union was complete at the upper end of the graft, but a pseudarthrosis existed at the lower end. The patient had perfect use of the limb, and could even play the piano. There was no interference with locomotion, though a slight relaxation of the ankle joint was present. The specimen showed a spontaneous fracture of the humerus due to a round cell osteosarcoma.

M. GUMBELLLOT.



## ORTHOPEDIC SURGERY

## DISEASES AND DEFORMITIES OF THE SPINE

**Gray: Certain Physical Signs in Scoliosis of Lesser Degree.** *J. Am. M. Ass.*, 1912, lix, 2249.  
By Surg., Gynec. & Obst.

Gray discusses the physical signs, particularly those of percussion, in cases of scoliosis. High pitched areas are found, posteriorly, opposite the superior vertebral convexity; anteriorly, over the intraclavicular region; posteriorly, below, opposite the lower vertebral convexity; and (when present) anteriorly, below, diagonally across from the superior infraclavicular area. With scoliosis minus actual lung disease the high-pitched areas are quite constant. Limited or absent downward excursion of the lung is found on the side opposite the upper vertebral convexity. Early tuberculous consolidation usually presents an area of dullness in front as well as behind on the same side; this it not true of the scoliotic phenomena.

L. G. DWAN.

**Strong: Eight Cases of Osteomyelitis of the Spine.** *Lancet*, Lond., 1912, clxxxiii, 1576.  
By Surg., Gynec. & Obst.

The disease is rare, but more common than is generally believed. Of the 8 cases reported, in one the arches of the vertebræ were the seat of the disease, whereas in all the others the bodies were attacked. The prognosis is naturally better in the former cases. Mortality varies in different statistics from 57 to 71 per cent. Of the 8 cases 7 died, in several of which some complication was the actual cause of death. The symptoms are very similar to those of Pott's disease. The actual cause of osteomyelitis of the spine is, as in other bones, usually the staphylococcus aureus. As to the predisposing causes, a history of injury is common; other predisposing causes given are cold and fatigue, antecedent infections, and puerperal infection. As regards treatment, there is no doubt that in immediate operation lies the only hope of saving life, except, perhaps, in typhoid cases. Makins and Abbott advise the opening of abscesses and the removal of necrosed bone. Kermisson urges that the bone itself should be left alone. He refers to the close resemblance that many of the cases bear to Pott's disease; indeed, several were actually diagnosed as such. With a little more care it should be possible to distinguish the two diseases in nearly every case. The abscess of Pott's disease most often appears externally in Petit's triangle, and is roundish, whereas the abscess of osteomyelitis spreads along the vertebral column and is fusiform and oblong. Especially important are evidences of secondary circulation in the skin around the abscess, owing to septic thrombosis in the spinal veins.

DONALD C. BALFOUR.

**Tournier and Ducuing: Indications in Cases of Spina Bifida in the New-Born** (De la conduite à tenir chez le nouveau-né atteint de spina bifida). *Arch. prov. de Chir.*, 1912, xxi, 49.

By Journal de Chirurgie.

The therapeutic indications vary with the anatomical variety of the spina bifida and with the presence or absence of complications, such as meningitis, hydrocephalus, trophic disturbances, etc.

**Case 1. Myelomeningocele.**—This condition is easily recognized by the presence of three concentric zones over the surface of the tumor—the dermic, serous, and medullary. This form is always fatal, and therefore no radical treatment should be attempted.

**Case 2. Myelocystocele.**—In these cases there is no loss of continuity of the skin over the tumor, unless it be due to secondary ulceration. The diagnosis is to be confirmed by careful examination and, if necessary, by radiography. The bony defect is usually lateral and affects only one side of the posterior vertebral arches. If no complications, such as trophic disturbances, ulceration or imminent rupture, are present, only palliative measures should be employed. By means of frequently changed aseptic dressings an attempt should be made to protect the tumor from traumatism and infection. The authors advise against radical treatment in these cases; in the first place, because sometimes, even though rarely, there may be spontaneous recovery, thus avoiding the risks of a serious operation; and secondly, because the operation does not insure freedom from late sequelæ. Complications that occur in these cases may contraindicate any interference or may demand it. In the case of a large tumor, with thin walls which threaten to rupture, if there are no signs of meningitis or hydrocephalus, a radical cure should at once be attempted by incision of the sac. In the case of a moderate sized tumor on whose summit an area of ulceration is present which threatens perforation, the first indication is to treat the inflammatory process antiseptically. Later, if rupture seems imminent, intervention may be attempted. In certain of these cases of myelocystocele, rupture and fistula formation are already present when the case reaches the surgeon. Here the authors advise immediate operation. Finally, if marked trophic disturbances are present, such as club-feet, deformities, or trophic ulcers, operation should be performed without hesitation, for it is the only means of handling these complications, and if undertaken early enough may yield good results; but if the child shows signs of meningitis or hydrocephalus the attempt is useless.

**Case 3. Meningocele.**—Contrary to the opinion of most surgeons, Tournier and Ducuing do not advocate operation in all these cases. They consider that the same indications hold good here as in the



case of myelocystocele, basing their opinion on the gravity of the operation.

GEORGES LABEY.

**Elliott and Sachs: Observations on Fracture of the Odontoid Process of the Axis with Intermittent Pressure Paralysis.** *Ann. Surg.*, Phila., 1912, lvi, 876.

By Surg., Gynec. & Obst.

A case is studied, clinically and after autopsy, where fracture had existed for 32 years. During that period there had been frequent attacks of intermittent pressure paralysis. Autopsy confirmed earlier diagnosis and X-ray findings. Following are among the observations mentioned:

(a) The fractured surface was by attrition converted into a false joint — a pseudarthrosis.

(b) Owing to forward displacement of the atlas, the vertebral space was much restricted.

(c) The odontoid process was broken at the neck and carried forward with the atlas and ankylosed with same.

(d) Insecurity of this part of the vertebral column was noted. Owing to the formation of the articular surfaces, displacement is made easy. X-ray cuts, drawings, and photos are given.

At the time the patient was seen the condition of the reflexes together with the atrophy of muscles indicated advanced secondary changes in the cord. This, together with marked respiratory paresis, forbade surgical interference.

The Mixter-Osgood operation was considered but discarded. Autopsy showed that it would have failed, since so much force was required to hold the atlas in place.

In a similar condition the authors suggest a laminectomy — a removal of a portion of the posterior arch of the atlas. At the proper stage such an operation was regarded as feasible.

#### MALFORMATIONS AND DEFORMITIES

**Greze: Surgical Treatment of Rachitic Deformities of the Leg** (Du traitement chirurgical dans les déformations rachitiques de la jambe). *Thèse de Paris*, 1912, Nov.

By Journal de Chirurgie.

Greze believes that besides the usual indication for surgical intervention in rachitic deformities of the leg, the æsthetic results should be taken into consideration, because of the frequency of mental disturbances arising in those left deformed. The author prefers osteotomy to osteoclasis. He enters at some length into the subject of osteotomy, and concludes by claiming certain advantages for the cuneiform type. First, by this method an exact correction of a marked curvature is best obtained, because the base of the bony wedge can be exactly calculated to effect this result. Second, complete correction of the faulty rotation is obtained. Third, there is no loss of length because the gain due to straightening compensates for the shortening caused

by the removal of the wedge. The author cites two of Veau's cases in which good results were obtained.

L. CAPETTE.

**Werndorf: The Pathology and Therapy of Congenital Dislocation of the Hip.** *Am. J. Orth. Surg.*, 1912, x, 243.

By Surg., Gynec. & Obst.

Werndorf reviews briefly the history of the diagnosis of congenital luxation of the hip, and then discusses in considerable detail the pathology, etiology, symptoms and treatment. The pathologic anatomy and its bearing upon the accepted theory of intrauterine pressure as the cause of the dislocation is most clearly brought out.

The symptomatology is also described with relation to the pathologic anatomy, and the clinical picture thus drawn is very clear. The differential diagnosis between congenital and traumatic dislocations is sharply made from the indifferent position of the one and the definite and fixed position of the other.

The treatment described by the author is the bloodless reduction method as practiced by Lorenz with tearing of all the muscles and tissues on the adductor side of the thigh until extreme abduction at right angles is possible. Then, by rotation inward and pressure upward below the trochanter, the femoral head is made to pass over the acetabular rim. The author explains that reduction may take place over the upper, the posterior or the lower border of the acetabulum, and the technique varies slightly with the point chosen for reduction to take place.

The method of retaining the head in the socket is by abduction, with right-angled flexion and outward rotation, and fixation in this position in plaster cast.

The socket is often so shallow that the stability of the joint is poor, and emphasis is laid upon the importance of weight bearing, or walking with the thigh fixed in the cast, so as to deepen and develop the acetabulum by pressure.

The novice is cautioned against the accidents incidental to reduction in these cases, such as fracture of the femoral neck, ischiadic paralysis, and injury to the femoral vessels; and for this reason he is urged not to exceed the age limits for reduction as laid down by Lorenz, i. e. 6 years for double dislocations and 10 years for single.

Palliative treatment is described for cases which are too old for the bloodless reduction, or where for other reasons the head cannot be retained in the acetabulum. This consists in transposing the location of the femoral head from its loose, movable position on the dorsum ilii to a more fixed and secure position above the acetabulum under the anterior superior spine. This is done by traction after tearing the adductors and then fixing the leg in hyperextension and abduction of thirty degrees.

JOHN L. PORTER.



## SURGERY OF THE NERVOUS SYSTEM

**Leriche: Radicotomy in Case of Parkinson's Disease** (Radicotomie dans un cas de maladie de Parkinson). *Lyon méd.*, 1912, cxix, No. 52.

Last year the author published (*Journal de Chirurgie*, viii, 543) the results of observations in a case of Parkinson's disease in which he cut the cervical spinal roots in an endeavor to modify the rigidity from which the patient suffered. The procedure modified the trembling characteristic of the disease but did not affect the rigidity. Recently the author operated upon another patient, at which time a marked hæmorrhage forced him to forego the extradural operation which he had intended. However, he opened the dura mater and sectioned most of the fibers of the sixth, seventh and eighth posterior cervical roots. On the seventh day, when the therapeutic results seemed to have been obtained and the post-operative results were good, the patient suddenly died from asphyxia. Temperature of 39°. Leriche thinks that death was due to bulbar infection. At autopsy nothing was determined.

From observations made in this case the author points out two interesting facts. The action did not affect the rigidity of Parkinson's disease, while it caused the tremor to disappear. There is, therefore, a difference to be made in the pathogenesis of these two symptoms. The therapeutic results showed that incomplete section of the third branch on either side markedly diminishes the tremor beyond all expectation.

J. DUMONT.

**Elsberg: Some Features of the Gross Anatomy of the Spinal Cord and Nerve Roots and Their Bearing on the Symptomatology and Surgical Treatment of Spinal Disease.** *Am. J. M. Sc.*, 1912, cxliv, 799. By Surg., Gynec. & Obst.

The following observations were made by the author during the last year in a number of dissections of the human spinal cord, nerve roots, and membranes in order to study their arrangement and relations. First, the structure of the posterior roots as the explanation for the peculiarity of root symptoms at different levels. It is well known that the anterior and posterior nerve roots perforate the dural sheath separately, with a thin septum of dura mater between them. In the cervical region the nerve bundles of the posterior roots remain distinct until they have passed through the dura. The bundles are spread out like a fan, the broadest part being at the cord and occupying a space of 1 to 2 cm. of the cord. In the dorsal and lumbar regions the arrangement is different from that just described. The separate bundles soon combine to form one bundle, which passes outward to the dural opening as the posterior root. From this arrangement it is clear that in the cervical region a tumor will for a long time make pressure upon only a few of the bundles which go to make up the posterior root. In the dorsal and lumbar regions the nerve bundles are united into one

nerve in the cord; a tumor in these regions will press upon a whole nerve root from the beginning. Clinical experience agrees with these anatomical facts.

A careful dissection of the posterior roots of the spinal cord will show a marked difference in their course at different levels. In the cervical and upper dorsal regions the nerve bundles unite to form the posterior root and pass out of the dural sac at almost a right angle to the cord. From the eighth cervical to the mid-dorsal region the cords of the posterior roots are different.

Each root has an inclination downward until it nears the dura. It bends upward at an angle just as it perforates the dura. In the mid-dorsal region this angle is often very acute — 40 to 45 degrees. In the lower dorsal and lumbar regions the posterior nerve roots pass downward and outward and perforate the dura. It is easy to understand, when one considers the striking angle in the posterior roots in the dorsal region, that only a slight inflammatory process near the dural opening may be responsible for the occurrence of marked root symptoms, movements of the vertebral column often intensifying or relieving symptoms.

The ligamentum denticulatum is a fibrous band which is derived from and attached to the lateral aspect of the pia mater on the cord midway between the anterior and posterior roots. On each side of the cord the ligament extends outward and is attached to the inner surface of the dura by numerous dentations or slips. It is due to this ligament that a tumor which grows on the anterolateral or posterolateral aspect of the cord will press upon only anterior or posterior roots for a long time, and thus give only anterior or posterior root symptoms before the appearance of pressure symptoms upon the cord itself.

The dentate ligament ends below, at the level of the first lumbar vertebra, in a fork-shaped extremity. The outer prong of the fork is usually about 1 cm. long and is attached at its end to the inner surface of the dura. Sometimes this prong is 3 or 4 cm. long. The inner prong of the fork is attached to the pia on the lateral aspect of the cord and is prolonged downward along the side of the conus to its tip. The first lumbar posterior root rests upon this fork, and it may be used as an anatomical landmark for the identification of the first lumbar root. If one begins to count from the posterior root which lies on the fork of the dentate ligament, which is the first lumbar, one can easily identify each posterior root.

The importance of these anatomical facts, for the operation and division of the posterior roots to the lower extremities, is clear, and the author advises that in such operation the lumbosacral cord be exposed by the removal of the laminæ and spinous processes of the eleventh and twelfth dorsal, or the



eleventh and twelfth dorsal and first lumbar vertebrae. After identification of the fork of the dentate ligament no difficulty will be had in recognizing the posterior roots, as they can be easily counted, beginning with the first lumbar.

**Duroux: Clinical Results of Nerve Grafts** (Résultats cliniques des greffes nerveuses). *Lyon chir.*, 1912, viii, 562.  
By *Journal de Chirurgie*.

Under the heading "Nerve Grafts" the author describes the free transplantation of a segment of a nerve which is interposed between two ends of a sectioned nerve. The transplant may be obtained from the patient himself (autogenous graft), from another individual of the same species (homogenous graft) or from an animal of another species (heterogeneous graft).

In a brief résumé of the historical aspect of the subject, from a clinical and experimental point of view, the author points out that the first experimental nerve transplantation was performed in 1870 by Philipeaux and Vulpian, who transplanted a segment of the lingual nerve of a dog into a defect of the hypoglossal. The first application of this method in man is due to Albert in 1876. Since that time Kaufman, Mayo Robson, Petersen, Powers, and James Sherren have tried this method. The number of cases reported, however, is few, as the author could only collect 30, 2 of which were autografts, 6 homografts and 22 heterografts. To these he adds a new case of Jaboulay, which was the first published in France. In this case the brachial vessels and the median and ulnar nerves had been severed by a stab wound on the internal aspect of the arm. The operation was immediately performed, the artery was ligated, and the nerve sutured, but in spite of this suture the sensibility and motility were not re-established and muscular atrophy appeared. It was most marked in the hand, where it affected the interosseous muscles and those of the thenar and hypothenar eminences. At the end of five months the case was reoperated. The proximal ends of the nerves were found to end in bulbous expansions, which were embedded in the cicatrix. There was a gap of 8 or 10 cm. at the point of severance. The central bulbs were lengthened and approximation was attempted by suture. A separation of 6 cm., however, persisted. The result of this second operation was negative and trophic changes soon appeared. One year after the accident Jaboulay decided to attempt a nerve transplantation. At the operation a gap of 15 cm. was found to be present. The ends of the nerves were isolated and freshened and the defect made good by transplantation of the

sciatic nerve of a dog (right great sciatic for the ulnar and right small sciatic and left perineal for the median). The transplants were left surrounded by the perinervous cellular tissues according to the technique described by Douroux in an earlier publication (*Journal de Chirurgie*). The wound healed by first intention, and the functional results of this graft were very gratifying. That same evening convulsive movements were observed in the paralyzed muscles. On the third day there was some motion in the wrist, and on the fifth day some sensibility was determined in the region of the thenar eminence. At the present time, five and a half months after transplantation, return of sensation is complete, movements in the wrist joint are normal, flexion of the fingers and apposition of the thumb are awkward and incomplete. The patient can write, hold a glass, etc. Duroux attributes the insufficiency of movement of the fingers in part to the trophic alterations of their articulation and to muscular atrophy.

Among the 30 observations of nerve grafts previously published (Kilvington), 19 only can be used from the point of view of functional results, and success is noted in 8 (1 through autograft, 1 through homograft and 6 through heterografts, to which must be added the author's case). It must be remarked that most often, as in the case of Duroux, the return of sensation, a function purely nervous, has been more complete than that of mobility, because after a nerve section the degeneration affects especially the muscular element.

CH. LENORMANT.

**Frazier and Mills: Intradural Root Anastomosis for the Relief of Paralysis of the Bladder and the Application of the Same Method in Other Paralytic Affections.** *J. Am. M. Ass.*, 1912, lix, 2202.  
By *Surg., Gynec. & Obst.*

Frazier and Mills report what they believe to be the first case in which intradural anastomosis of spinal nerve roots has been successfully accomplished. Eight months after operation the patient could dispense with the urinal, which he had worn constantly, for a period of 12 hours, and with pressure above the suprapubic region partial evacuation of the bladder was possible. They believe the operation has a field in some forms of residual paralysis after poliomyelitis and possibly in some monoplegias of central or peripheral origin. They discuss the physiologic problems involved in re-establishment of innervation to the muscles of the bladder and the operation as performed.

L. G. DWAN.



## MISCELLANEOUS

## CLINICAL ENTITIES—TUMORS, ULCERS, ABSCESES, ETC.

**Moullin: The Biology of Tumors.** *Brit. M. J.*, 1912, ii, 1594. By Surg., Gynec. & Obst.

There is no hard and fast line between innocent and malignant tumors. They are common to all animals. There is no proof of any parasitic origin. Tumors are composed of a group of cells which for some reason break off all relation with the rest, abandon all idea of function, and retain only the faculty of growth. They are truly parasitic. Moullin takes up at some length the study of the germ cell and the somatic cell — the former specialized for the purpose of maintaining the species, the latter subordinating itself to the maintenance of the germ cell. Whatever the origin of the tumor, no such arrangement ever exists between its cells and the parent body as exists between the germ and somatic cell. So there are two types of tumors, one developing from the germ cell and one from the somatic cell. The paper deals practically with only the somatic cell tumors. These tumor cells have thrown off all restraint. They grow and multiply more rapidly because the force that would have been consumed in raising the cells to a higher plane of differentiation is available now for growth. Their energy, which should go for the common good of the parent, is now directed to their own selfish end of increase in size and number. M. S. HENDERSON.

**Lisser and Bloomfield: Further Observations on the Carcinoma Skin Reaction.** *Bull. Johns Hopkins Hosp.*, 1912, xxiii, 356.

By Surg., Gynec. & Obst.

In the hope of simplifying this test and shedding further light on its value in the diagnosis of malignant disease, the authors carried out a series of experiments upon 62 verified cases of malignant disease (carcinoma and sarcoma) and in 94 cases of healthy individuals, the patients suffering from various non-malignant ailments. Throughout the experiments the corpuscles of Group 4 alone were used (the corpuscles of which are neither agglutinated nor hæmolyzed by any sera in vitro).

A summary of their 156 cases in which the corpuscles of Group 4 alone were used shows that:

1. In 62 cases of verified malignant disease, two thirds gave a positive reaction and one third were negative.
2. In 94 control cases, 91.6 per cent were negative and 8.4 per cent positive.
3. As a practical diagnostic adjunct, a negative skin test adds little or no weight to the evidence against cancer, being comparable to many other clinical tests of empirical nature.
4. A positive reaction is strong presumptive evidence of cancer.
5. To obtain reliable results, corpuscles of Group 4 must be used.

GEORGE E. BEILBY.

**Bryan: Precancerous Lesions.** *J. Tenn. St. M. Ass.*, 1912, v, 315. By Surg., Gynec. & Obst.

After a brief discussion of the theories of the origin of cancer, Bryan expresses his adherence to the view that parasitic causes may be dismissed as having no support in fact, and reviews Ribbert's theory advanced in his recent work, "Das Karzinom des Menschen," as the most rational explanation of the origin of cancer. He summarizes Ribbert's views as follows: "Every tissue has its proper place in relation to other tissues, and as long as the structures remain normal cannot transgress the limits set for it. In the relation between epithelium and the subepithelial connective tissue and between the mucous membrane and the submucous connective tissue these lesions are rigidly drawn, so that, whatever cause may produce a proliferation of the epiblastic and the hypoblastic cells, it can only result in the accumulation of such cells in a mass on the surface in question, but never in the penetration of that tissue which serves as a basement membrane, and therefore never in the production of cancer. Something more is necessary than an increased capacity on the part of the cells for multiplication."

In every case of beginning cancer studied by Ribbert — and his work has been borne out by other investigators — an explanation was found for the invasion of the subjacent connective tissue not in the epithelial cells, but in the changes brought about in the connective tissue itself as the result of an inflammatory process, constant in appearance and produced by irritation, which reduces the protective powers of this connective tissue against the ingrowth of epithelial cells and at the same time stimulates the epithelial cells to an abnormal proliferation. The irritant which produces this inflammatory process may be mechanical, chemical, bacterial or electrical. The author then discusses the origin of cancer from new growths, such as atheromata, epidermoids, dermoids, teratomata, embryomata, and polypi of the alimentary tract. It is interesting to note that the small number of cancers positively demonstrated in individuals under fifteen years of age occur "in precisely those organs which are most subjected to irritation or equivalent disturbances." Leucoplakia, occurring in the mouths of syphilitics, alcohol drinkers and smokers, is very frequently followed by cancer. Bottini observed 100 cases of cancer of the tongue, of whom every one was a smoker or a chewer of tobacco. Cancer of the gall-bladder is almost invariably associated with the presence of gallstones or a history of gallstone colic. "Von Neve, in India, studied 1720 malignant tumors; of these, 848 were cancers of the thigh and abdomen, which resulted from scars produced by the custom of carrying baskets of fire under their clothing." Xeroderma, gastric ulcer, X-rays and radium and bilharziasis are cited as irritative conditions which may result in cancer formation. The



gist of the paper may be summed up in the statement that if precancerous lesions were more closely studied the recognition of the condition might be made earlier and more efficient treatment applied.

**Bériel and Delachanal: Malignant Lipoma** (Les tumeurs malignes du tissu cellulo-adipeux). *Arch. de Méd. exp. et d'Anat. path.*, 1912, xxiv, 717.

By Journal de Chirurgie.

A woman (age not given) entered the hospital with a large tumor on the posterior aspect of the right thigh, which had been present for one year. At operation the neoplasm was found to have arisen from the sheath of the sciatic nerve. The specimen weighed three kilos. Six months later there were metastases in the lumbar glands and in the fatty capsule of the left kidney, causing lumbar and sciatic pain. A second operation was performed. The left kidney was removed with a portion of the tumor as well as the lumbar glands. A year and a half after the first operation the patient died in a cachectic condition. Autopsy showed an involvement of the right lumbar fossa, the omentum, the right lung, and the intermuscular cellular tissues of the neck. Histological examination of these different tumors showed that they were of lipomatous origin, both in the case of the primary tumor and in that of the metastases. At certain points there were myomatous and sarcomatous characteristics, which were interpreted as indicating a lack of differentiation. The diagnosis was of a malignant lipoma, as opposed to that of sarcoma with lipomatous evolution. These tumors arise from the fatty connective tissue and ordinarily, as opposed to the benign lipomata, their stroma is very cellular. These cells develop fatty vesicles, but in atypical cases the sarcomatous appearance becomes predominant and the fatty origin of the tumor cannot be diagnosed.

P. MASSON.

**Neef: The Interpretation of Post-Operative Fever in Aseptic Cases.** *Am. J. Surg.*, 1912, xxvi, 423.

By Surg., Gynec. & Obst.

It is a matter of common knowledge that every operation on an aseptic case is physiologically followed by a slight rise in temperature which is not due to infection. This reaction constitutes what has been fitly termed aseptic fever. The definite nature of this reaction is apt to escape attention unless the post-operative fever chart is subjected to more than the cursory examination which it generally receives during the surgeon's rounds. Furthermore, a curve which clearly represents the typical reaction after an aseptic operation is not so frequently met with in everyday practice as might be supposed, because of the disturbing influence on the temperature produced by manifold minor complications in the course of recovery. By exercising certain precautions, however, these extraneous influences may to a great extent be eliminated systematically, and the true aseptic fever curve be obtained in its pure form.

It is evident that with a concrete view of the character and behavior of the typical reaction, the normal course of aseptic fever, any deviation from the normal which is due to the advent of a complication can more readily be detected. In order to have a reliable working basis in this clinical study it should be the rule to lay stress on accurate measurement and recording of temperatures by the nurse in charge, and to demand rectal readings for all abdominal and pelvic cases unless otherwise specified. In addition, in order to ascertain if the case is afebrile from the beginning, there should be kept at least one day's record of the temperature before operation.

The normal aseptic fever is remittent in type; the highest wave follows the operation, while the waves on succeeding days diminish gradually in amplitude until the temperature becomes practically normal towards the end of the week. In general the maximum rise after an aseptic operation may be expected to occur at a somewhat variable time within the first thirty-six hours; that is, it usually manifests itself on the day following the operation. For example, the average time of its appearance for one series of cases was eighteen hours, the earliest rise being nine hours, and the latest noted twenty-nine. The maximum rise should be quite definite in its amplitude, in general about 100.6° F. per rectum; and as a rule it should not exceed 101° F. per rectum without arousing the suspicion that some complicating factor is present. Under normal conditions of the pelvic organs, that is in the absence of inflammatory foci in the pelvis, the onset of menstruation should not materially disturb this reaction. An anomalous rise occurring at this time may suggest the presence of some latent pelvic trouble.

Another point of importance in the clinical study of the normal aseptic fever is that the rise of temperature on the day following the maximum rise, or sooner — the post-maximal rise as it might be called — should never exceed the maximum rise in amplitude. It may approach the latter, but is usually less. Furthermore, while it is characteristic of the curve of normal aseptic fever that the post-maximal wave does not exceed the maximum wave, this relation of the two waves to each other in the first part of a post-operative fever curve, although suggestive, cannot be interpreted as precluding later complications or as insuring an uneventful course.

Conversely, in a case of bowel stasis, where the preoperative evacuation of the colon is insufficient, the post-maximal rise may be markedly affected and show an elevation which greatly exceeds the maximum rise. Thus the case may appear to assume an alarming turn, and the post-maximal rise reach 104° F. or more. In such cases, however, it is helpful to remember that the pulse is apt to remain comparatively slow. When, on the other hand, the preparation for operation was adequate and the origin of the stasis is post-operative, several days usually elapse before the influence of intestinal



putrefaction is reflected in the fever curve. The maximum and post-maximal waves, in such cases, may therefore remain unaffected, the perturbation appearing later.

Indeed, when early post-operative evacuation of the colon is practiced, that is on the second or third day, the enema becomes a prophylactic measure. When the rise appears on the fifth or sixth day after an operation it may sometimes be traced to a slight infection of the skin or mucous membrane, perhaps through the channel of a suture. In view of the relative frequency of aberrations due to stasis in the colon, it is rarely in point to open the surgical dressing for revision of the wound before the effect of emptying the bowel has been observed. Elevations of temperature which have their origin in the bowel are promptly impressed after an enema has been administered. When this is not the case, a spot of tender infiltration in the suture line of the mucous membrane or skin may be sought, and in the skin, in addition, a slight redness betrays the source of trouble. With a concrete conception of the typical aseptic reaction, and how it may be modified by the more common minor complications, the way is open to the further study of the influence which more serious complications may exert.

**Welter: Echinococcus Disease.** *Beitr. z. klin. Chir.*, 1912, lxxxii, 435. By Surg., Gynec. & Obst.

Welter reviews our present knowledge of echinococcus disease and reports two cases from the Leipziger Clinic. In both cases there was a primary liver echinococcus which ruptured into the right pleural cavity. The first case was that of a former shepherd who complained of severe pain in the hepatic region, with bulging of the lower ribs on the right side, an enlarged and sensitive liver and an X-ray shadow with a high standing diaphragm. A diagnosis of echinococcus was made and the operation by Trendelenburg showed a large cyst of the liver with characteristic microscopical findings in the cyst fluid. Four weeks later there were symptoms of sudden perforative pleurisy. An extensive rib resection with drainage was performed and later a thoracoplasty (Schede) brought about a cure.

The second case was more obscure, beginning with a sudden chill, sweats and pain in the right hepatic region. Scolices and hooklets were found in the pleural fluid. The right thorax was resected from the seventh to ninth rib by Payr. Death occurred in ten days from lung embolism.

In both these cases the diagnosis was confirmed by the positive complement fixation test of Bordet-Guigon, both before and after operation. Welter considers the X-ray and the serologic test of the greatest inconstancy in the diagnosis. Eosinophilia is too inconstant to be of value. The treatment is primarily surgical. Thirty-five cases of primary liver echinococcus with rupture into the right pleural cavity have been reported in the literature. The operative mortality is close to 80 per cent.

ERWIN P. ZEISLER.

**Garin: Contribution to the Study of the Tropical Ulcer.** *Transvaal M. J.*, 1912, viii, 122.

By Surg., Gynec. & Obst.

The cause of tropical ulcer is now admitted to be the spirochæta schaudinni Prowazek, associated with fusiform bacilli, which have some relation with the bacilli fusiformis of Vincent. But the species of fusiform bacilli is not yet fixed, and the mutual relations of the spirochæta and the fusiform bacilli and modes of infection remain obscure.

The author has studied 400 cases and finds that the histopathological changes agree with those studied by Keysseltz and Mayer. These changes follow some quite definite line in regard to arrangement and relations of spirochætes, fusiform bacilli and cellular elements. The spirochætes found by the author conformed to the Schaudinn type and are known by the description of Prowazek. Direct infection from wound secretion is possible, but probably is rare. The author believes that transmission occurs by the aid of the resistant forms of Prowazek. He describes some special bodies which he observed in three biopsies, and believes they may have some part in transmission and that possibly they may arise from the spirochætes, which he believes precede the advent of fusiform bacilli in the formation of tropical ulcer. He believes that when spirochætes, few in number, have penetrated the skin they may have a tendency to form these bodies, probably a cyst stage in their life cycle, and then may adhere to splinters or other foreign substance and be introduced by the foreign body into healthy skin elsewhere to develop an ulcer. These special bodies are referred to as intra-epidermal by the author. He advances a theory that the spirochæte and fusiform bacilli may have a common origin, since many transition forms and gradations are found between spirochætes and fusiforms.

The most satisfactory treatment consists in two or three daily applications of trypanblau in watery solution of 1 or 2 per cent, after first cleansing the ulcer. After 36 hours parasites have usually disappeared and the ulcer presents a healthy red granulating surface. Epidermic grafting by the Thiersch method is then performed upon the granulating surface. The worst cases usually leave the hospital in fifteen to twenty days when treated by this method.

FLOYD B. RILEY.

## SERA, VACCINES, AND FERMENTS

**Tournier: The Use of Antitetanus Serum in Tetanus** (Considérations sur le serum antitétanique dans le tétanos). *Thèse de Paris*, 1912, Nov.

By Journal de Chirurgie.

The author has compiled an extensive review of various opinions expressed on the value of antitetanus serum, and has come to the following conclusions: First, the efficiency of the preventive injection of antitetanus serum is proven by the diminished number of cases of tetanus seen nowadays in civil and military practice. (He mentions the infrequency



of tetanus as a complication following the numerous accidents on the Fourth of July.) Cases of tetanus arising in spite of preventive injections are very rare, and in many of these the author considers that the injections were not given according to the proper rules. The dose of the serum is usually 10 cc., but in cases of serious laceration 20 or 30 cc. should be given. The author stipulates that the French serum should be used, which ought not to be fresher than three weeks nor older than seven or eight months. The injection should be repeated every ten days up to the healing of the wound. Most scrupulous disinfection of the wound should be carried out.

Many serious mishaps have followed the preventive injections, and as with other therapeutic sera they are difficult to avoid. It is perhaps better to give the second injection between the ninth and eleventh day following the first. Calcium chloride, in doses of one gram per day by mouth, to be taken during the first fifteen days, has been held to be of value. Lastly, it is best to use the same method of injection each time.

The curative action of antitetanus serum is uncertain, but in some cases of proven tetanus the use of very large doses given intravenously almost daily has brought about a cure.

H. GUIMBELLOT.

**Von Dungern: Serodiagnosis of Tumors by the Complement Deviation Reaction** (Ueber Serodiagnostik der geschwülste mittels Komplementablenkungsreaktion III). *München. med. Wchnschr.*, 1912, lix, No. 52.

By Surg., Gynec. & Obst.

The author believes that the character of his tumor reaction can be made more specific by using acetone extracts of human red blood cells, instead of alcoholic tumor extracts, as advised in previous papers. Blood of paralytics gives better specific results. With these blood cell extracts the sera of patients with malignant tumors, also sera of syphilitic and tubercular patients, gives a positive specific reaction. By the use of chemically pure sodium hydroxyl solutions the reaction can be made more specific, as nearly all the tubercular and syphilitic sera react negatively. Only in case of surgical tuberculosis was a positive reaction present in spite of the proper use of the sodium hydroxyl solution.

Among 102 sera of patients with carcinoma, the reaction was positive in 91 cases. It was with  $\frac{1}{16}$  normal serum that hæmolysis was arrested. Of 16 cases of sarcoma 11 gave positive reaction. Among the cases suspicious for cancer were 15 cases with a positive Wassermann, nevertheless the tumor reaction remained negative. This proves the reaction as very specific.

The nature of the reaction does not lie in antibodies but in abnormal metabolic substances. By adding carbohydrate to normal human blood serum a cancer reaction can be imitated.

HELIODOR SCHILLER.

**Schwartz and McNeill: Further Experiences with the Complement Fixation Test in the Diagnosis of Gonococcus Infections of the Genito-Urinary Tract in the Male and Female.** *Am. J. M. Sc.*, 1912, cxlix, 815.

By Surg., Gynec. & Obst.

In a previous paper attention was drawn to the value of the serum diagnosis of gonococcus infections in general, showing that in chronic gonococcus infections, even though limited to the genito-urinary tract, an antibody specific for the gonococcus could readily be detected in the blood. Experimental work showed that the secret of success lay in the use of a polyvalent antigen on account of the fact that the different strains of the gonococcus seemed to differ considerably one from the other. Finally, the authors stated that, in their opinion, the facts at hand seemed to prove conclusively that a positive reaction denotes the presence of recent activity in the body of a focus of living gonococci. They give their technique in detail and discuss,—first, the significance of a positive and negative reaction; second, the time of appearance of a positive reaction (not to be expected earlier than about the fourth week of the disease, and then only in acute cases with some complication, such as acute prostatitis, gonococcus arthritis, etc.); third, the time of disappearance of a positive reaction after cure; and fourth, the relative value of the complement fixation and bacteriological methods of diagnosis in chronic and doubtful cases, and the technical difficulties connected with the two methods. Chronic antero-posterior urethritis is also discussed, and a number of cases are reported.

Chronic prostatitis, as well as verumontanum disease in which gonococci were not found, is discussed. In these cases clinically cured the authors examined 165 cases, of which 13.2 per cent gave a positive reaction. Gonococcus infection of a woman is discussed and the conclusions drawn from this series of studies are as follows:

1. A positive reaction denotes the present or recent activity in the body of a focus of living gonococci.

2. A negative reaction does not exclude gonococcus infection, but for the reasons stated should be accorded considerable importance.

3. A strong positive reaction is not to be expected earlier than about the fourth week, and then only in very acute cases with some complication.

4. A positive reaction is not obtained if the disease is limited to the anterior urethra.

5. A positive reaction does not entirely disappear until seven or eight weeks after cure. In other words, if a strong positive reaction is obtained seven or eight weeks after the apparent clinical cure, the patient should be looked upon as still harboring gonococci.

6. In chronic cases, isolation of the gonococcus in culture is the only absolute bacteriological proof of gonococcus infection.

7. The technique of a complement fixation test



is simpler than that of isolation of the gonococcus in culture, and the possibilities of error are less.

8. In cases regarded clinically as post-gonorrhoeal, a positive reaction is obtained in 31.4 per cent.

9. In 62 cases of chronic prostatitis giving a history of gonococcus infection within three years, a positive reaction was obtained in 54.8 per cent.

10. In 165 cases looked upon as clinically cured for at least three months, a positive reaction was obtained in 13.2 per cent.

11. In women a positive reaction is probably not obtained unless there is some involvement at least of the cervix.

12. On account of the unreliability of the bacteriological diagnosis of gonococcus infection in women, the complement fixation test should prove of special usefulness in gynecological conditions.

H. A. POTTS.

**Silver: Vaccine Therapy in Tubercular Bone and Joint Disease.** *Penn. M. J.*, 1912, xvi, 219.

By Surg., Gynec. & Obst.

The divergent opinions regarding tuberculin may be explained by the difficulty of accurately estimating the degree of improvement, the selection of unsuitable cases, the lack of a simple and accurate method for determining dosage, and too short a period of treatment. That it has proven efficacious in some cases cannot be doubted if we are to credit literature, a shorter duration, an improved function, or both being claimed. It is noteworthy, however, as showing the general American experience, that of 51 orthopedic surgeons only half could report (circular letter) any special experience, while half of these were opposed to its use, and only four could be regarded as decidedly favorable. The author's cases, about fifty, showed general improvement but no gain in duration or function.

At present tuberculin is to be regarded as an adjunct to other measures in selected cases when used by the experienced, but it certainly is not a measure for the busy practitioner.

**Lyons: A New Form of Tuberculin: Some Notes on Its Diagnostic and Therapeutic Value.**

*Lancet*, Lond., 1912, clxxxiii, 1582.

By Surg., Gynec. & Obst.

A comparatively large number of patients react positively to old tuberculin in whom no trace of tuberculosis is found clinically and who give no history of a tubercular infection. By a process of precipitation of old tuberculin with absolute alcohol the author obtains a filtrate which gives much more accurate results. If a minim of this filtrate be injected under the horny layer of the skin, a raised inflammatory area appears round the site of injection in from 12 to 18 hours in known tuberculous individuals; no positive reaction has been noted in persons apparently free from tuberculous disease. The inflammatory area in early cases of tuberculosis is usually nearly an inch in diameter. In more

advanced cases the inflammatory area is smaller, usually about half an inch in diameter. In still more advanced cases the area of inflammation and induration is less well defined but recognizable, while in very advanced cases a reaction, if at all present, is very slight. The test as described has up to the present been applied to 270 persons. Of these, 191 were known to be suffering from tuberculous disease in various forms. Of these 191 tubercular cases the reaction was positive in 186; the 5 tubercular cases yielding a completely negative reaction were in the last stages of pulmonary tuberculosis and died within two weeks of the date of the application of the test. In the remaining 79 negative cases no reaction whatever was noted, and in these great care was taken to exclude the possibility of a tuberculous infection, past or present. A number of patients have been treated with the filtrate, and so far the results have been very encouraging. It is easily borne and does not produce the untoward results so frequently given by other forms of tuberculin. DONALD C. BALFOUR.

**Whiteside: The Use of Tuberculin in the Treatment of Surgical Urogenital Tuberculosis.**

*J. Am. M. Ass.*, 1912, lix, 2232.

By Surg., Gynec. & Obst.

Whiteside considers the tuberculin treatment of any case of tuberculosis in any stage as about on a par with bacterin treatment of any other condition. A great deal may be accomplished by using tuberculin in proper dosage. He regards the choice of the preparations used as a personal matter, each one being guided by personal experience. The opsonic index merely introduces another element of uncertainty and error without compensatory advantage.

L. G. DWAN.

**BLOOD**

**Vincent: Treatment of the Hæmorrhagic Diseases of the New-Born.** *Arch. Pediat.*, 1912, xxix, 887.

By Surg., Gynec. & Obst.

This article begins with a very thorough review of the literature on the subject, and then takes up the question of animal serum and human blood serum. The subject of blood transfusion is reviewed and the later method used by Vincent is given. The technique is as follows:

Glass tubes 12 cm. long and 3 mm. in diameter are used, and the end which is inserted into the infant's vein is about  $2\frac{1}{2}$  mm. in diameter. The tubes are coated with paraffin or a wax mixture to prevent clotting of the blood. The vessels connected are the radial artery of the donor, usually of the father, and the largest accessible vein of the infant. The vein best used in young infants is the external jugular. This is exposed by a half inch incision; the vein is clamped with a light artery clip as low as possible and tied above. The vessel is then cut through and three small hooks are inserted into the slit. The tube is then inserted into the vein, and the other end into the donor's artery. Transfusion



is stopped when the infant's face regains a normal red color.

There are reports of 11 cases treated in this way. In each case the immediate effect was to check the bleeding and correct the anæmia. Eight of the 11 cases were cured; one died of a diffuse peritonitis 20 hours after operation. One other case which ended fatally was probably of syphilitic origin; this child died one month after operation. The other case which died was moribund when treated; the pulse was helped by transfusion, but respiration was not improved. Four additional cases which were not treated by transfusion received injections of whole human blood. In two of these there was intracranial hæmorrhage, which was demonstrated by lumbar puncture and at autopsy. Two other cases of melæna neonatorum died rather suddenly.

All experiences teach us that the best results in these cases are to be obtained by the use of whole human blood, blood serum or transfusion of blood. In severe cases the last is to be preferred. There are two sets of cases, however, which cannot be benefited by this line of treatment. The first is where the cause of bleeding is bacterial infection or ulcers of the stomach or duodenum or syphilis. The second form comprises cases with hæmorrhage in the brain, adrenals, kidneys and liver. C. G. GRULEE.

**Pearce and Austin: The Relation of the Spleen to Blood Destruction and Regeneration and Hæmolytic Jaundice.** V.—Changes in the endothelial cells of the lymph nodes and liver in splenectomized animals receiving hæmolytic serum. *J. Exp. M.*, 1912, xvi, Dec. By Surg., Gynec. & Obst.

It is known that large endothelial cells in the spleen have the power to engulf red blood cells. Further, the presence of blood pigment (in anæmia and malaria) in the cells (Kupfer's cells) of the liver capillaries indicates that these cells play some part in the destruction of red blood cells.

The authors found that in splenectomized animals which had received hæmolytic serum there was a great increase of the phagocytic power of the endothelial cells of the lymph nodes and liver for red cells. They found the sinuses of the lymph nodes packed with large, pale endothelial cells, nearly all of which contained red blood cells. This increase was not found in normal animals which received hæmolytic serum. These findings strongly suggest the development of a compensatory function of the lymph nodes and possibly the liver in the absence of the spleen, i.e. the function of destroying red blood corpuscles. J. F. CHURCHILL.

**Pearce, Austin, and Musser: The Relation of the Spleen to Blood Destruction and Regeneration and to Hæmolytic Jaundice.** III.—The changes in the blood following splenectomy and their relation to the production of hæmolytic jaundice. *J. Exp. M.*, 1912, xvi, 758. By Surg., Gynec. & Obst.

In a previous paper it was noted that (1) during an early period after splenectomy, jaundice fre-

quently failed to occur upon the administration of hæmolytic serum; (2) later there was an increased resistance of the red blood corpuscles; and (3) spontaneous jaundice occasionally occurred several months after splenectomy.

Examination of the blood of splenectomized dogs showed that there is a gradual progressive decrease in the red cells and hæmogoblin which reaches the lowest level at about the 26th day. From this time there is a gradual increase until the 82nd day, the blood reaching normal at about the end of four and one half months. It was found that the period during which jaundice failed to appear corresponded roughly to the period of blood degeneration; that the period of increased resistance corresponded to the period of blood regeneration, and the spontaneous jaundice to the time when the blood regained its normal level. It was found by animal experiment that dogs rendered anæmic by bleeding also failed to show jaundice. It was further shown by blood count, hypotonic salt solution test and by examination for hæmogoblin in the serum and urine that the difficulty in producing hæmoglobinuria and jaundice in animals splenectomized one month or more, is due to an increase in the resistance of the red cells.

The authors tentatively conclude that the failure of the appearance of jaundice upon the injection of hæmolytic serum is due to the anæmia and not to the absence of the spleen. They conclude also that it is possible that spontaneous jaundice occurring at long periods after splenectomy is an accompaniment of the complete regeneration of the blood. J. F. CHURCHILL.

**Pick: Hæmorrhagic Diathesis.** *München. med. Wchnschr.*, 1912, lix, Dec. By Surg., Gynec. & Obst.

The author reports 34 cases of hæmorrhagic diathesis which occurred in the county of Saaz from March to June, 1912. Next to small superficial hæmorrhages, large deep subcutaneous and intramuscular infiltrations were observed.

The microscopic examination of the blood did not show any changes, nor was the coagulation-time of the blood decreased. Subjective symptoms varied greatly, also the general condition of those affected.

As to the etiology of the condition, the author believes the character of the food to be an all-important factor. At the time of the present study there was a failure of crops and the poor population was forced to live on sausages, coffee, bread and meat, food which lacks the proper amount of potassium salts. In short, the author believes the etiology to be the same as in scurvy.

HELIODOR SCHILLER.

**Wilson: Fatal Post-Operative Embolism.** *Ann. Surg.*, Phila., 1912, lvi, 809. By Surg., Gynec. & Obst.

The author presents a summary of the fatal cases of post-operative embolism occurring in St. Mary's Hospital (Mayo clinic) from the opening of the



institution September 30, 1889, to December 31, 1911. During this period over 63,000 major operations were done and 47 cases of fatal post-operative embolism occurred, a percentage of 0.07. The highest percentages of fatalities from operations on various regions were: prostate (0.66), small intestine, colon and rectum and gall-bladder in the order named.

The lowest percentages of mortality by regions in which any occurred were of the appendix and mouth. No fatality from embolism occurred in any of the 1346 operations on the breast, nor did any follow any of the 449 vaginal hysterectomies, though there were 5 fatalities in the 1712 abdominal hysterectomies. More than one half of the fatalities occurred between the fifth and twelfth days after operation. In three fourths of the cases the embolism was pulmonary.

**Findley: Puerperal Thrombophlebitis.** *Am. J. Obst.*, N. Y., 1912, lvi, Dec.

By Surg., Gynec. & Obst.

Findley gives the histories and pelvic findings in a series of 7 cases of chronic and acute pelvic thrombophlebitis. Two of these cases recovered — one, a chronic case, after the administration of vaccines, and one after an exploratory operation which presented no accessible primary focus. The autopsy findings on the 5 fatal cases, together with a study of the literature, leads Findley to the following conclusions regarding the Trendelenburg operation:

1. The operation of Trendelenburg is correct in theory, but is as yet in the experimental stage.

2. It is contrary to modern practice to open the abdomen in the course of puerperal infection unless for drainage in general peritonitis, and we therefore view the suggestion of Trendelenburg with misgivings.

3. We are as yet unable to demonstrate clinically the extent to which the infection has traveled, hence it follows that an exploratory incision must be the final resort in determining the extent of the infection. Even this means may fail to give the desired information.

4. The pelvic views including the iliacs may not be thrombosed and yet the infection may attack the veins higher in the abdomen, beyond control and even beyond inspection through an exploratory incision. Furthermore, bacterial emboli may develop in the lungs and elsewhere without the formation of thrombosed veins.

5. The thrombosed veins may be secured and the infection later travel by other avenues and lead to a fatal issue.

6. It is not always possible to demonstrate the presence of infected emboli which, when found, are viewed as contraindications to operative treatment.

Findley believes the Trendelenburg operation will find a limited field of usefulness in obstetric surgery, and that the procedure is worthy of an extended trial.

N. SPROAT HEANEY.

**Bull: Thrombosis and Embolism Following Appendicitis Operations.** *Beitr. z. klin. Chir.*, 1912, lxxxii, 345.

By Surg., Gynec. & Obst.

In 188 operations for appendicitis, Bull has observed thrombosis in 22 cases and embolism in 15. He divides thromboses into manifest (palpable) and occult (not palpable). The palpable thromboses occurred chiefly in the second week, and especially in the left femoral vein. The occult thromboses were manifested chiefly by an increase in the pulse rate, without a corresponding increase in the temperature. The symptoms of a pulmonary embolus were sudden, severe pain in the cardiac region or chest, anxious expression, cyanosis, dyspnoea, rapid pulse, and death in a few minutes. Smaller emboli caused sudden pain in the epigastrium, precordium, chest or back, lasting from 5 minutes to 1 or 2 days. In addition, there was restlessness, orthopnoea and a transitory rise of temperature and pulse. Hæmoptysis occurred 1 to 4 days later. There was usually no cough or expectoration. The physical signs depended on infarct formation. Regarding the etiology of post-operative thromboses, Bull makes the following statements: (1) Thrombosis rarely occurs, if ever, before the age of puberty, and with greatest frequency after 30. (2) Thromboses are more frequent after laparotomies than after other operations. (3) Thrombosis may occur in clean as well as infected cases. (4) The thromboses may develop far from the operative field. (5) The left femoral vein is more often affected than the right. (6) Pulmonary emboli due to post-operative thrombosis seldom lead to abscess formation. (7) In acute appendicitis thromboses occur much more rarely when not operated than when operated. Bull argues that the determining factor in thrombosis is the anatomical change in the venous wall, diminished elasticity increased, thickness after middle age, plus variations in the pressure. The exact cause of post-operative thrombosis is still problematical.

ERWIN P. ZEISLER.

## BLOOD AND LYMPH VESSELS

**Buchanan: Circular Resection and Suture of the Axillary Artery for Transverse Laceration by Fracture-Dislocation of Anatomical Neck of the Humerus.** *Surg., Gynec. & Obst.*, 1912, xv, 648.

By Surg., Gynec. & Obst.

In 1908, the author could find but 38 verified cases of fracture of the anatomical neck of the humerus, and since that date the literature has not shown any great number of cases. This particular bone lesion was not a causative factor in any of the reported cases of circular or lateral suture of the axillary artery, nor was laceration of this artery mentioned as a complication of this particular fracture.

The author's own case is reported as follows: An incision was made at right angles to the anterior axillary fold. The dislocated head was found with its articular surface presenting and its fractured



surface impacted into the packet of vessels and nerves. When removed, a tear, four fifths across the axillary artery and just opposite the emergence of the subscapular and posterior circumflex arteries, was revealed.

A loop of tape was passed around the artery  $1\frac{1}{2}$  inches above the laceration, just tightly enough to control the circulation. A rubber protected clamp was placed upon the distal segment. The two emerging arteries were then ligated and severed and transverse section made of the lacerated artery, thus procuring two freshened stumps. Being unfamiliar with the Carrel technique, the author used his own improvised method. He sutured the vessel by means of interrupted sutures of the finest silk on the smallest of curved intestinal needles. About twelve sutures in all were placed, and they passed through all of the coats except the intima, which in this case was calcareous. A provisional loop of catgut was placed about the artery above the suture and left loose so that it could make no constriction but could be used in case of secondary hæmorrhage, the ends being brought out alongside the drains. After removing the clamps the hand became warm, whereas throughout the operation it had been cold. Pulsation of the vessel below the suture was normal, but was doubtful at the wrist. No tissue for covering the vessel was available. The wound was closed with gauze drainage. The patient recovered, but has never had a distinct radial pulse and has considerable muscular spasticity and some limitation of motion at the shoulder.

Brief abstracts of the 29 cases of circular sutures of arteries hitherto reported are given by the author.

FLOYD RILEY.

**Ney: The Rôle of the Vein in the Arterial Collateral Circulation** (Du rôle des veines dans la circulation collatérale artérielle). *Rev. d. Chir.*, 1912, xlii, 993. By Journal de Chirurgie.

Ney has studied the functional relationship between the venous and arterial networks in the extremities. His observations were based on animal experiments and on two cases in which he had occasion to resect an axillary aneurysm. He proceeded as follows in his experimentation. He first determined the pressure in the general arterial system, and then, after exerting pressure upon the chief arterial trunk in the extremity, he determined the arterial pressure below this point. Pressure was then exerted on the corresponding veins. In this way he was able to determine the influence of the two factors which affect the arterial pressure below the constriction — first, the influence of the extent of the collateral arterial circulation, and second, the influence of the capacity of the venous channels. After ligation of a large arterial trunk the arterial pressure below the ligature may fall so low that it cannot satisfy the aspirating action of the venous outflow. In such a case no blood, or at least insufficient quantities of it, will reach the distal portions of the membrane. The author proposes to over-

come this by ligation of the vein at the same time as the artery. In this manner the venous pressure is raised, which in turn causes a rise in arterial pressure sufficient in most cases to insure distribution of the blood to the distal portion of the extremities. The author's eighteen experiments performed on dogs seem to sustain this point of view. The practical conclusion is that ligation of the chief artery of a limb should be accompanied by ligation of the corresponding vein.

J. OKINCZYK.

**Boulay: Lymphatics of the Anus and Rectum** (Étude sur les lymphatiques de l'anus et du rectum). *Thèse de Paris*, 1912, Nov.

By Journal de Chirurgie.

The author, after devoting a chapter to technique, reviews the earlier work of Sappey, Quénu, Gérota, Cuneo and Marcille. He then details his own researches and states his conclusions.

1. The cutaneous zone of the anus has two paths of lymphatic drainage. The first consists of two lymphatic trunks on either side, which go to the inguinal glands. This path has been well described by Quénu and Gérota. The second path leads to the anorectal glands. They account for a recurrence above the levator ani in cases where the surgeon has been unable to excise these affected glands, though he may have otherwise performed an extensive extirpation.

2. The anal mucosa and the adjacent portion of the rectal mucosa possess lymphatic channels which run to the middle and superior hæmorrhoidal glands. These lymphatic channels, which lead to the middle hæmorrhoidal glands, are interrupted by certain small glands variable in size and number which lie along the course of the "homonymous" artery. These are simply relays, and the main trunks lead on to a larger gland situated at the point of origin of the middle hæmorrhoidal artery on the wing of the sacrum at the level of the second sacral vertebra.

3. The upper portion of the rectal mucosa drains into the middle and superior hæmorrhoidal glands.

4. The lymphatics of the rectum and anus anastomose freely among themselves and with the lymph vessels of neighboring organs. The anorectal glands form a relay on both the superior and the middle hæmorrhoidal paths of lymphatic drainage. The columns of Morgagni are the sites of a free anastomosis between the middle and superior hæmorrhoidal lymph channels. Boulay has not been able to find any lymph vessels accompanying the inferior hæmorrhoidal vessels nor has he seen the intrapelvic gland which Cuneo has described as lying at the point of origin of the internal pudic artery.

L. CAPETTE.

#### POISONS

**Mayer: Purulent Complications Due to Erberth's Bacillus** (Complications purulentes dues au bacille d'Erberth). *Argentina Med.*, 1912, No. 48, 805.

By Journal de Chirurgie.

The author reports three cases of typhoid fever with purulent complications:



**CASE 1.** Patient was a man of 20 years, who had run a typical clinical course with several hæmorrhages and a positive Widal. On the 23rd day he had a chill, and his fever, which had been down to 98.9° F., rose to 103.1° F., with a pulse of 140. Upon examination a small swelling was found on the right side of the neck, which the patient said had been present for eight years. During the ensuing five days this tumor developed rapidly in size and became very painful. Fluctuation was made out. Aspiration yielded a thick yellow pus, from which typhoid bacilli and staphylococci were isolated. Fever was of a septic type. Later there developed two small abscesses, one in the left breast and the other on the external aspect of the arm. In the pus from each of these subcutaneous abscesses typhoid bacilli and staphylococci were identified. The abscesses were incised and the patient recovered.

**CASE 2.** The patient, a man of 23 years, had run a typical typhoid course. He had shown a well marked bronchitis. There had been a hæmorrhage on the tenth day; on the sixteenth day a sacral area of ulceration had been noticed; on the eighteenth day his temperature, which had previously fallen, began to show increased daily variations. His pulse rose to 140. Another decubital ulcer appeared on the back and one also over the trochanter. Auscultation at the base of the right lung revealed signs of pleural effusion extending to the angle of the scapula. The fluid obtained by aspiration contained typhoid bacilli. The patient's Widal reaction was positive. He was transferred to the surgical service, and died a few days later.

**CASE 3.** A child of 15 years developed a small painful tumor in the right flank, a month and a half after recovery from typhoid fever. Upon examination this tumor was found to be situated in the right hypochondrium, between the parasternal and mammillary lines. It caused a well-circumscribed, visible bulging at this point. It moved with respiration, fluctuated, and was tender on palpation. On percussion the dullness over the tumor was found to be continuous with the hepatic dullness which extended upwards to the fifth interspace in the mammillary line. Examination of the other viscera was negative. There was no fever. Widal reaction was negative. Exploratory puncture yielded a yellowish green purulent fluid, which microscopically contained numerous leucocytes and some degenerated liver cells. Typhoid bacilli were found in the cultures. The patient was transferred to the surgical service, and an incision was made over the presenting portion of the tumor. A cystic tumor was found adherent to the abdominal wall which, when it was emptied of its purulent contents, proved to be lined with a typical hydatid membrane. The diagnosis of a secondarily infected hydatid cyst of the liver was made. The cyst was drained, and the patient recovered.

SALVA MERCADÉ.

## SURGICAL THERAPEUTICS

**Loeb, McClurg and Sweek: The Treatment of Human Cancer with Intravenous Injections of Colloidal Copper.** *Interst. M. J.*, 1912, xix, 1015.  
By Surg., Gynec. & Obst.

The authors introduce this important contribution to surgical literature with a short résumé of previous work done along lines of chemo-therapy. With some of this work as a precedent, the authors experimented on mice and other species of tumor-bearing animals, and finally on humans, with various salts and solutions of copper. On the human subjects they used a colloidal solution of copper prepared according to Bredig's method. Each patient received daily an intravenous injection of the solution, an average of 300 to 400 cc. of the solution, warmed to about body temperature, being slowly introduced. Usually six, sometimes seven, injections were given each week.

The injection is invariably followed by a rise of temperature, which varies usually between 100° and 102° F. Within six hours the temperature again returns to the normal level. The rise of temperature is frequently inaugurated and sometimes followed by a more or less severe chill. By diminishing somewhat the quantity of fluid injected, the chill can frequently be avoided. The reaction becomes less after a certain number of injections have been given. Simultaneously with a rising of temperature the pulse rate is usually increased. In certain patients who had a tendency to irregular heart action before the treatment was begun, this irregularity may be accentuated a few hours after the injection. Otherwise no notable changes have so far been observed after the injection.

On the whole patients tolerate these injections very well, and their general condition (appetite, strength, complexion) improves. The number of erythrocytes does not decrease, but on the contrary probably shows a definite increase. The authors describe in detail the effects of the injections on the tumor and on the individual. They relate several case histories and finally draw conclusions which, for the sake of accuracy, had best be presented in their own words, as follows:

"We may state that we are now able to cause the gradual retrogression of human cancer, which until now has withstood various modes of treatment; and furthermore, that the treatment does not seem to be limited to one kind of cancer, but applicable in the effective treatment of various kinds of cancer. Some cases which we have had under treatment for several weeks seem to be near a cure; all others are progressing favorably. A definite judgment on the ultimate outcome must still be suspended at present. Patients in which the growth of metastases is very rapid and extensive and in which the cachexia is already very pronounced cannot yet be benefited by this mode of treatment. We hope, however, that the further investigations which we are carrying on at the present time will lead to a still wider ex-



tension of the applicability of this mode of treatment. In particular, we have made preparations to test the effect of this treatment on other cases of sarcoma, and also in psoriasis.

"There are two more conclusions to which we wish to refer very briefly. In the first place, our provisional opinion, which was the starting point of these experiments—that many cases of human cancer might be more accessible to this mode of treatment than are rapidly growing mouse cancers—has been confirmed by our observations. Secondly, our experiments present very strong additional evidence in favor of the view which one of us has always upheld, namely, that there exists no essential difference between cancer of rodents and human cancer."

M. G. SEELIG.

### ELECTROLOGY

**Gray: Röntgenization for Non-Malignant Laryngeal Vegetations.** *Am. Quart. Röntgenol.*, 1912, iv, 69.  
By Surg., Gynec. & Obst.

Four children suffering from papillomatous vegetations of the larynx were treated by Röntgen rays with uniformly favorable results. The vegetative growths were single or multiple and all were situated on or near the vocal cords. The symptoms included not only voice changes but even marked obstruction to respiration.

The value of X-rays in treating these cases is emphasized by the inadequacy of other methods. Recurrence is ordinarily the rule, whereas in radiotherapy the results so far have been permanent.

In each case the dosage employed is given in such terms that it can be easily duplicated by other X-ray workers. The quantities named are moderate and quite within the usual danger limits. The author advises, in addition to the usual protective measures, that as much of the thyroid as possible be screened from the rays.

HOLLIS E. POTTER.

**Pagenstecher: X-Ray Burns.** *Beitr. z. klin. Chir.*, 1912, lxxxii, 301.  
By Surg., Gynec. & Obst.

Three precautions are necessary in order to avoid burning by X-ray. These are proper usage, the right kind of tube, and the best protective apparatus, together with complete isolation from the rays. There is no such thing as idiosyncrasy against the X-ray. The burn is the result of an absorption of a quantity of rays incompatible with the tissues. This absorption may occur in one or several sittings. The burns may be divided into the following classes: erythema, blistering, necrosis, and cancer formation.

The X-ray ulcer is the most common form. It begins with dermatitis and rapidly attains a larger size, which remains the same, with no tendency to healthy granulation for months. In some instances deep necrosis follows. The author describes a case of ulcer of the abdomen resulting from X-ray burns following eleven sittings within three weeks. Histologically, one observes the usual findings of ulceration

with some vacuolization of the connective tissues. The blood-vessels are destroyed and their lumina occluded. The epithelium is the tissue which is damaged most extensively. As to the therapy, Pagenstecher does not find the good results of camphor-alcohol as observed by Windler. He prefers surgical treatment, excision, and plastic repair with flaps or transplantation of Thiersch grafts.

CARL BECK.

**Jones: Ionic Medication.** *Arch. Röntg. Ray*, 1912, xvii, 246.  
By Surg., Gynec. & Obst.

The author gives a résumé of the results obtained with ionic medication by himself and others. He deals mainly with two ions, zinc for surgical and salicylic for medical application.

The first named has proven of value in simple ulceration of the skin, the mucosa of the nose, mouth, and rectum, and of the cornea; in pyorrhœa alveolaris, in chronic urethritis, in mucous colitis, hæmorrhoids, anal fissure, sinuses, vaginitis and endometritis. Acne, furunculosis, sycosis, lupus and rodent ulcer are favorably influenced by it and it can be used for the removal of warts and corns.

Salicylic ion medication is of value in neuralgias and perineuritis, in painful affections of muscles and fibrous tissues, and in the arthritides of gouty or rheumatoid nature.

Chlorine and iodine ions are mentioned as useful in softening cicatricial tissue, radium in the treatment of sarcomata, mercury in ringworm, and numerous others which may some day be found of value when given in this form.

ADOLPH HARTUNG.

**Skinner: Circulatory Opacity.** *Am. Quart. Röntgenol.*, 1912, iv, 75.  
By Surg., Gynec. & Obst.

In view of the successful application of colloidal silver solution in pyelography, and since the injection of a 5 per cent solution of it into the blood stream is permissible in septic conditions in the light of our present knowledge, the author conceived the idea of using this same method to portray, radiographically, the circulation of the blood in the living being. Although he has not made an attempt to demonstrate this on a living subject, he has injected the blood-vessels of an amputated arm and obtained fair views of them.

ADOLPH HARTUNG.

### SURGICAL DIAGNOSIS

**Hagemann: Newer Methods in the Diagnosis of Surgical Tuberculosis.** *Beitr. z. klin. Chir.*, 1912, lxxxii, 1.  
By Surg., Gynec. & Obst.

Next to the clinical symptoms, the investigation of the pathologic excreta plays the most important rôle in the diagnosis of surgical tuberculosis. Tuberculous pus has well-marked gross and microscopic features. The whitish color, thin consistency, with cheesy, greenish flocculi, plus the scarcity of corpuscular elements with predominance of lymphocytes are the distinguishing features. Müller and



Jochmann find that pure tuberculous pus has no digestive action on serum plates owing to the scarcity of leucocytes with their proteolytic ferments. Müller identifies tuberculous pus by bringing it in contact with Millon's mercury solution. Ordinary pus dissolves on the surface with the formation of a red color, while the tuberculous variety forms a fine pellicle. These methods are of value only when the pus is obtained from the closed body cavities.

The demonstration of tubercle bacilli in pus or an exudate is the most certain method of diagnosis of tuberculosis. By direct smear this is frequently impossible because of the scarcity of tubercle bacilli in the excreta. Centrifugalization or sedimentation may facilitate this. The addition of the alkalis of sodium and potassium, or alcohol makes the fluid more homogeneous and favors sedimentation. The antiformin introduced by Uhlenhuth dissolves all organic substances, such as mucus, fæces, keratin, skin, hairs, etc., and dissolves all other organisms except the tubercle bacillus in a concentration of 2.5 per cent. The original antiformin method has been modified by Loeffler, who shakes the material with chloroform and alcohol and finds the tubercle bacilli in the zone above the chloroform. Hagemann has found the bacilli in 31 out of 44 cases of surgical tuberculosis by using Loeffler's method and staining both with Ziehl-Neelson's carbol-fuchsin stain and the gram (Much's) stain. Much's demonstration of a granular gram-positive form of tubercle bacillus not stained by the ordinary carbol-fuchsin shows the necessity of using both stains.

The most reliable diagnostic method heretofore has been inoculation into guinea pigs. The injections may be made intraperitoneally or subcutaneously into the inguinal region. The former method requires 6-8 weeks and in the latter the inguinal gland can be examined in 3-4 weeks. Bloch recommends traumatizing the inguinal glands before the injection. This method may fail because occasionally the bacilli will pass through the inguinal glands and produce a general infection only in 6-8 weeks. Oppenheimer advocates the injection of the material directly into the liver and spleen. In 5 to 19 days he finds miliary tubercles in these organs. Esch injects 1 cc. directly into the heart. This method is dangerous because of the liability to shock and sudden death and is limited to clear fluids. The urine for example, must be neutralized with normal NaOH, centrifugalized, the sediment diluted with physiologic salt solution and warmed before the injection. The injections are made into the third or fourth interspace next to the sternum. Hagemann has obtained evidence of generalized tuberculosis by the intracardiac method on the 10th day, and by the subcutaneous method on the 15th day.

Jacoby and Meyer made use of the increased susceptibility of tuberculous animals toward tuberculin to demonstrate the infection during the life of the animal. They injected 0.5 to 1.0 cc. tuberculin subcutaneously and drew conclusions from the

temperature rise and the exitus. The death of the animal alone is of value as normal animals show temperature reactions following tuberculin injections. Esch first used tuberculin intracutaneously to test the reaction of tuberculous guinea pigs. Römer showed that tuberculous guinea pigs react to an intradermic injection of 0.02 tuberculin in a characteristic manner. A swelling the size of a quarter appears in 18-24 hours. This has a bluish red center with a porcelain-white ring around it and a considerable inflammatory areola. In about 4 days the skin necrotizes and a scar remains for a long time. In another form of the reaction the central discoloration is absent and a small necrotic area forms. A third, a typical form with redness and swelling for 48 hours, is described. Hagemann tested the intradermic tuberculin method on guinea pigs infected with tuberculous material and obtained positive results from the 10th day to the 21st day.

The objection to all these methods is the long interval of time involved and the failure in some cases of suspected tuberculosis, especially in the serous exudates. Hagemann has devised a new test to demonstrate specific bodies, either toxins or anti-toxins, in the tuberculous material in which no tubercle bacilli can be found. He injects 0.1 cc. of the suspected material intracutaneously into tuberculous guinea pigs and obtains characteristic reactions which normal control animals do not show. The test is made as follows: 0.1 cc. of the material to be tested is injected intradermically into a positively tuberculous animal whose susceptibility is tested by the intracutaneous tuberculin test. An equal amount is injected into a normal guinea pig. As controls, intraperitoneal injections may be made. Pus and exudates may be injected directly. Sputum must first be treated with antiformol, centrifuged and dissolved in salt solution. Highly susceptible guinea pigs are essential and are obtained by inoculating them with  $10^7$  mg. tubercle bacilli. They live 6-8 weeks and are susceptible to as small a dose as 0.000002 tuberculin on the 14th day. Hagemann has used this method in combination with the other method with the material from 48 cases of surgical tuberculosis. In two exudates from the knee joint, one ascitic fluid, and one case of pus from a glandular abscess, the intracutaneous method alone showed positive tuberculosis.

The specific reaction produced by tuberculous material shows all the characteristics of the intradermic tuberculin reaction. A visible swelling of the skin appears in 24-48 hours, showing a bluish-red center surrounded by a porcelain-white ring and an inflammatory zone. Control animals never react typically. Ordinary pus produces inflammation of the skin both in tuberculosis and control animals.

Hagemann concludes that he has a specific biological reaction for tuberculosis which allows of a positive diagnosis of suspected tuberculous material in 24 to 48 hours, and which is especially of value in cases in which tubercle bacilli cannot be demonstrated by other methods.

ERWIN P. ZEISLER.



## GYNECOLOGY

### UTERUS

**Rabinovitz: Myoma of the Cervix Uteri.** *Surg., Gynec. & Obst.*, 1912, xv, 668.

By Surg., Gynec. & Obst.

The author calls attention to the fact that cervical myoma is rare, the average of the statistics from six clinicians being 3.3 per cent of all myomata. He considers the subject under the following headings: 1. The report of a case of true cervical myoma. 2. The definition and classification of cervical myoma. 3. A consideration of the pathology and etiology of cervical myoma. 4. The relation of cervical myoma to conception, pregnancy and labor. 5. Treatment. 6. A tabulation of 132 cases of cervical myoma recorded in the literature since 1885.

For practical purposes he would classify cervical myoma into supravaginal and intravaginal. Pathologically, cervical myoma differs from corporeal myoma only by its greater tendency to encapsulation and that it more frequently sends off shoots into the surrounding structures. The etiology is as yet not established. Recent studies on the internal secretion of the ovary, while still in the process of crystallization, hold out new hope. Clinically, this theory is adequately supported.

C. H. DAVIS.

**Faure: Surgical Treatment of Cancer of the Cervix** (Sur le traitement chirurgical du cancer du col de l'utérus). *Arch. mens. d'Obst. e. d. Gynec.*, 1912, i, 149.

By Journal de Chirurgie.

Faure states the conclusions drawn from a series of 250 operations performed for cancer of the uterus since 1896.

1. In early cancer, which has only invaded one lip of the cervix and in which the vaginal cul-de-sac is still flexible and the mobility of the uterus is unimpaired, the operative mortality does not exceed 5 per cent. Complete cure is the rule and recurrence the exception. Faure has cures of 8, 10, and even 14 years' duration.

2. When the lesions are more extensive, involving both lips of the cervix, the vaginal mucosa, and the base of the broad ligaments, with accompanying decrease in the mobility of the uterus, the operative mortality rises to 20 per cent; and in only 50 per cent of the cases is there a permanent cure.

3. When the mobility of the uterus is almost lost, owing to extensive invasion of the culs-de-sac and of the broad ligaments, the operative mortality is 50 per cent and over, and recurrence is the rule. Yet, while a cure is here the exception, it is still a possibility which warrants the operation.

4. The operative mortality in the whole series

was 15 per cent, with 33 to 40 per cent permanent cures.

Wertheim's abdominal hysterectomy is the operation of choice. Schauta's vaginal operation is indicated only in cachectic or very obese cases or in those in which, owing to the extent of the involvement, palliative measures only are possible. In Wertheim's operation the uterus, the upper portion of the vagina, and the parametrium are excised en bloc. The incision should be through normal tissues and yet not too far removed from the new growth. The hypogastric glands are removed only when they are found to be palpable. A well-perfected technique is a necessity. Preliminary ligation of the hypogastric arteries is very useful. They are to be found by enlarging the incision into the broad ligaments by the aid of the fingers. The adnexa are removed in one piece with the uterus, but if this proves awkward they are excised separately. The isolation of the ureters is an indispensable step. They are found by retracting the posterior surface of the broad ligaments, to which they are adherent. Preliminary catheterization is useless. The ureters are very rarely invaded by the neoplasm. The uterosacral ligaments are carefully clamped and cut. The vagina should not be divided between two clamps. If its anterior wall is first incised, it is possible to complete the division under control of the eye, thus ensuring an incision through normal tissues. The vagina should be scrupulously disinfected before operation. A drainage tube and two gauze drains are placed in the vagina and the peritoneum is closed above. In certain cases it is better to begin the operation by the vaginal route. The vagina is divided 2 cm. below the involved tissues and the upper segment closed with purse-string suture. An abdominal hysterectomy is then performed. In cases of pregnancy, the operation is, if anything, more easily performed.

Treatment with radium should not be begun before the operation, because of its sclerosing action on the tissues, which complicates the procedure of isolating the ureters. The application of radium three weeks after operation is, on the other hand, very useful.

M. GUIMBELLOT.

**Boldt: Which Is the Best Operation for Cancer of the Uterus?** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

Boldt stated that vaginal extirpation of a carcinomatous uterus gave a lower primary mortality, particularly the method of vaginal hysterectomy generally employed, than the extended abdominal hysterectomy. It must be conceded, however, that in cancer of the cervix the percentage of recurrences



was larger after cancer operations where vaginal hysterectomies were done.

When one decided upon vaginal extirpation, the technique devised by Schauta, of Vienna, whereby the ureters were exposed and the uterine arteries isolated and tied so that the parametria might be extensively extirpated, was the method that should find preference. The paravaginal section, which was a necessary accompaniment of the operation, would, if surgical precautions were used, give no more trouble than any ordinary wound. With the paravaginal section one secured satisfactory access to the field of work, which without it would be a physical impossibility.

Despite its great superiority over the regular hysterectomy, the method of hysterectomy usually employed, it should be limited to obese women, the incipient stages of epithelioma of the vaginal part of the cervix, and to cancer of the body of the uterus, when the uterus was freely movable. It was particularly applicable in the cases of the aged, because of the greater sluggishness of the lymphatic system in persons well advanced in years. Generally speaking, however, the extended abdominal operation should be done unless there was a contra-indication for doing such an extensive operation. One could undoubtedly remove more parametrium

through the abdominal route. Furthermore, one could inspect the glands and extirpate them if the abdomen was opened, which could not be done when the vaginal route was used. The remote results showed that if the abdominal operation be done properly the ultimate percentage of recoveries from cancer of the uterus was fully 50 per cent more than by the vaginal route. But one must really do the extended operation, not the original pan-hysterectomy first done by Freund for cancer of the uterus.

E. S. TALBOT, JR.

**Wyatt: Report of Eight Cases of Prolapse Treated by LeFort's Operation.** *Proc. Roy. Soc. M.*, 1912, vi, 59. By Surg., Gynec. & Obst.

Wyatt gives a brief history of this operation, calling attention to the fact that it is of great value in cases of procidentia in old people, where any form of pessaries fail to keep the womb in position, and where, either on account of age or from the condition of the abdominal wall, a laparotomy for fixation methods is contraindicated. The method used by Tate prevents any question of active sexual life, so that it has been performed only on single women, or women who no longer lead actively sexual lives. Wyatt reports two of his own and six cases operated upon by Tate.

C. H. DAVIS.

**[Monograph.] Schauta: The Extended Vaginal Total Extirpation of the Uterus in Carcinoma Cœli** (Die erweiterte vaginale Totalextirpation des Uterus bei Kollumkarzinom). Vienna and Leipzig: J. Sfar. By Surg., Gynec. & Obst.

The attention of surgeons has been so actively centered within the last few years on the wide removal of tissue surrounding carcinoma of the cervix uteri that a review of Schauta's work on the extended vaginal operation will be of interest.

He draws attention to Schuchardt's description of his technique, in 1893, and says that while the importance of gland removal, as shown by Clark and Ries in 1895, lent an impetus to the abdominal operation, yet the expectations after the removal of the glands were not realized. He states that vaginal operations are tolerated best and proposes to prove, first, that gland removal is not necessary, and second, that as much parametric tissue can be removed by vagina as per abdomen.

Schauta states that the first proposition is proven by almost all cases with involved glands having recurrences. The few cases not recurring do not disprove this rule, in view of the increased length of operation in the gland removal.

He states that his second proposition is true, and gives numerous cuts showing the amount of parametric tissue removed with the uterus. He expresses a doubt that surgeons would have abandoned the vaginal route except for the gland removal, and has himself refused the consideration of gland removal from the start. He wishes the vaginal operation called "the extended vaginal total extirpation."

In Chapter II the technique as developed in 258 cases is given. It aims to remove as much of the parametric tissue as possible, and at least one third of the vagina. Usually this can only be accomplished by the paravaginal cut and the separation of the ureters.

In the preliminary treatment of the carcinomatous cervix, the operator, assistants, and nurses wear gloves and a special set of instruments are used. The carcinomatous mass is thoroughly curetted and cauterized and the cavity tamponed. The vagina is now disinfected, the instruments are removed, and the gowns and gloves used by the operator and assistants are changed for fresh ones. The circular incision of the vagina is begun ordinarily at the junction with the middle and upper third—in severe cases at the middle; in extensive metastasis in the vagina, the entire vagina should be removed. This circular section is begun by grasping the vagina at the desired points with clamps or volsella and incising the wall external to them. The separation is then completed by blunt dissection up to the cervico-vaginal junction. The vaginal cuff thus formed is stitched closely together with several strong silk sutures, left long for the purpose of traction on the attached uterus. In this way the diseased area is closed off from the field of operation. The gloves are now changed, as also are the instruments that were in use. Schauta now



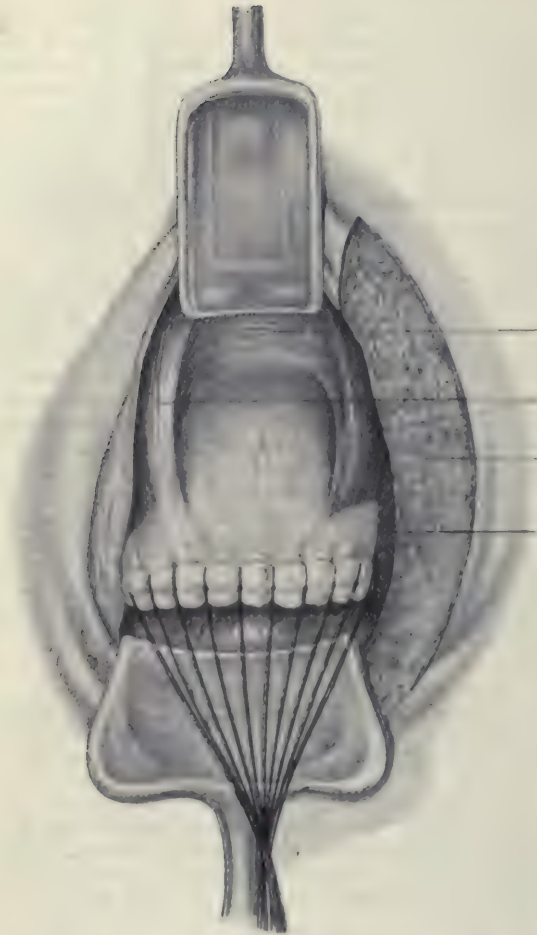


Fig. 1. The extended vaginal operation at the end of the fourth step. The circular cut, cuff, separation of the bladder in its middle portion and the perineo-vaginal cut are done. The pillars of the bladder are still in connection with the parametria and cover the uterine vessels and the ureters.

separates the bladder in the middle line, and the so-called pillars of the bladder are carefully separated, differing from Schuchardt in doing this before the paravaginal cut is made in order to be able to abandon the operation if the carcinomatous involvement is too extensive. The ureters are not exposed until after the vaginal cut. If the carcinoma involves the bladder and a complete removal is found impracticable, the operation is abandoned and the separated parts are removed by the cautery.

Schauta delays the paravaginal cut until after the separation of the vaginal portion, the formation of the closed cuff, and the separation of the bladder to a sufficient extent to prove that a continuation of

the operation is permissible. In this order of operating he differs from Schuchardt, who makes the paravaginal cut — or as Schauta calls it, "the perineo-vaginal" cut — first. Schauta claims an advantage in his procedure, not only on account of avoiding the trauma and the subsequent repair in the event of the necessity of abandoning the operation, but in avoiding as much as possible infection and carcinomatous implantation in the perineo-vaginal incision. He follows Schuchardt in commencing this cut in the vagina at the point of the commencement of the circular cuff, where the lateral wall goes over on the posterior wall. From this point the incision is continued outward and progressively deeper to the posterior end of the labia majora, and in depth to a point near the posterior and lateral margin of the anus.

*Isolation of the ureters.* Experience in 258 cases proves to the author that this can be done without the aid of ureteral catheters. The bladder separation already commenced is now continued well up anteriorly and laterally. Underneath the pillars

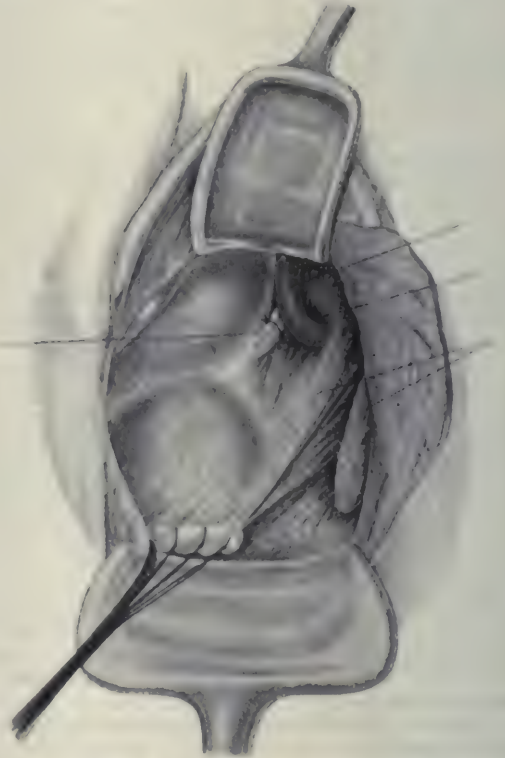


Fig. 2. Fifth step. The pillars of the bladder separated from the parametria and pushed forward. This makes the upper margins of the parametrium with the ureter slit, its loops, and the uterine vessels visible, which latter go here behind the ureter toward the lateral edge of the vagina. The vaginal cuff is pulled aside and downward, so that the ureter forms a sharply curved loop.



of the bladder and at the level of the internal os the ureters are found.

He divides the cases into two kinds. In one the connective tissue is not infiltrated and is easily separated. In such instances of soft elastic tissues, the pushing up of the pillars of the bladder and the separation of its posterior wall from the parametrium also separates the few fibers of the parametrium covering the ureter, forming the ureter slit. In this way the ureter goes up with the bladder and is not seen during the operation. Such cases, however, are rare.

In the other and larger class, where there is infiltration of the parametrium on one or both sides, the ureteral slit over the parametrium of the involved side is fixed, and the ureter remains in position to be dissected out. On exposure of the anterior face of the parametrium the ureter will be seen in a sharply angled loop, with the uterine artery above. The difference in curve from that of normal, is due to the downward and lateral traction on the uterus and the parametrium, thus pulling the ureter with it. At the exposed point the separation of the ureter from the parametrium is made either by blunt or sharp dissection. With wide retraction of the separated bladder and ureters, the uterine artery and vein are tied well out to the side. Schauta uses silk.

The cul-de-sac is now widely opened, after separating the rectum posteriorly. The parametrium is thus exposed on both sides and is cut through far out on the lateral walls of the pelvis, with the finger posterior and retraction anterior as guides. In this separation a branch of the middle hæmorrhoidal artery will be cut, otherwise there will be only venous bleeding. Schauta objects to using ligatures on the parametria, stating that portions will be left in the grasp of the ligature, which should be removed. The venous oozing is checked by the application at once of a firm compress, while the parametrium of the opposite side is similarly removed. He remarks on how surprisingly movable apparently fixed parametrium becomes after it is separated above and below.

The division of the tissues well out on the side walls of the pelvis being accomplished, the bladder peritoneum is now opened, and the uterus is only held by its broad and round ligaments. These are tied off in several small mass ligatures, which are left long to pull down the stump, the ovaries and tubes if healthy being allowed to remain on both sides, since he states that in no instances except in cancer of the body of the uterus are these the seat of metastases, and their removal would unnecessarily complicate the operation in preventing the extraperitoneal treatment of the ovarian stumps.

After removal of the uterus with its attached parametrium, the field of operation is gone over and all bleeding points are enclosed in ligatures. The venous bleeding will have already ceased. The peritoneal edges are now carefully closed, the

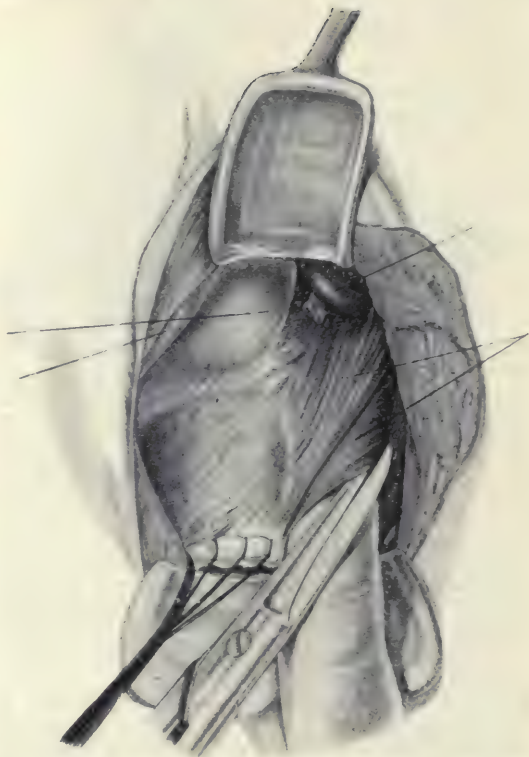


Fig. 3. This plate shows the operation at the end of the sixth step. The ureters, as in Fig. 1, are pulled downward and to the right side. The uterine artery and vein are ligated and cut through. This frees the ureter, which is pulled farther upward, so that its curve is more rounded than in Fig. 2. The parametrium is free, as far as the lateral portion, which in the illustration is hidden behind the corresponding part of the perineo-vaginal cut but can be made accessible by spatula. The index finger of the left hand is introduced into the open cul-de-sac. The scissors commence to cut through the left parametrium almost in a horizontal direction and from the lower lateral edge.

ovarian stumps being drawn down into the wound by the attached ligatures, and made extraperitoneal by being stitched into the angles of the united peritoneal edges. The raw area is loosely packed with gauze.

The perineo-vaginal incision is now closed and the operation is completed. The gauze drain is not usually removed completely until the eighth day, on account of the tendency to collapse of the vaginal tube.

**Operability.** Schauta does not include among the cases reported any abdominal operations for carcinoma, or carcinoma of the body, or for recurrences, or operations on private patients. From June, 1901, to June, 1907, 564 cases came to the clinic. De-ducting 35 who refused operation his operability



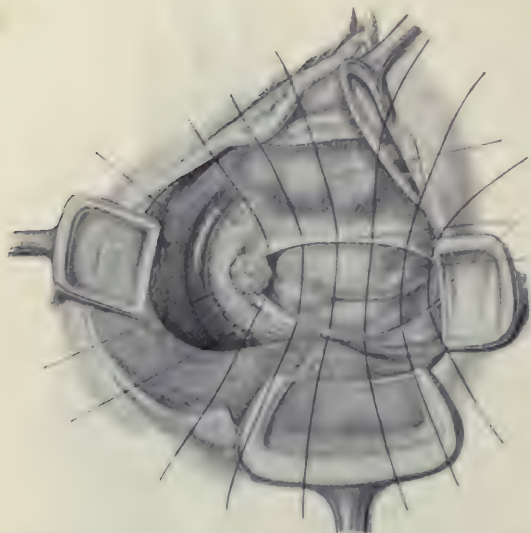


Fig. 4. Sutures through the peritoneal edges. In the right corner the stump of the broad ligament is fixed by a suture passing through it. At its outer side the ureter curves from the post-pelvic wall to the bladder. Posterior are the ligated uterine vessels of the right side.

was 258 cases or 48.5 per cent,<sup>1</sup> distributed as follows: In 1901, 43.9 per cent; 1902, 33.3 per cent; 1903, 45.1 per cent; 1904, 54.4 per cent; 1905, 62.8 per cent; and 1906, 55.2 per cent. He draws attention to the increase of the operability through the extended vaginal operation over the average vaginal extirpation, which is 14.7 per cent.

With 325 patients from 1904 to 1907, he asked the following questions suggested by Winter:

1. How long after the appearance of the first symptoms did the patient ask for medical advice?
2. What has the physician done?
3. What was the difference in time between the advice given for operation and that of visiting the clinic?

He finds that in answer to question No. 1, 21.8 per cent asked for medical advice within the first month; 20 per cent after three months, and the rest later. In answer to the second question, he finds that 318 called in regular physicians, of which 251 were examined immediately and 216 sent to specialists. In answer to this third question, 78 per cent sought the clinic within the first week after receiving advice.

Schauta states that, from a study of his cases, if all had acted in the promptest and most favorable manner on the three questions, 87 per cent would have been operable, a small number giving no early symptoms. He lays great emphasis on instructing

the public as to the first symptoms of cancer of the uterus and in seeking medical advice promptly. He quotes Winter as stating that all cases in which the vaginal vault is only slightly encroached on and in which the infiltration of the parametrium is only in the vicinity of the cervix are operable. Winter only excludes cases with infiltration down to the pelvic wall.

Schauta says: "My opinion has been changed since I have been performing the extended vaginal total extirpation. Even the infiltration of the total parametrium is not a contraindication provided the tumor mass is, on examination under ether, only slightly movable, since in its removal ligatures are not used." Histological examination has shown

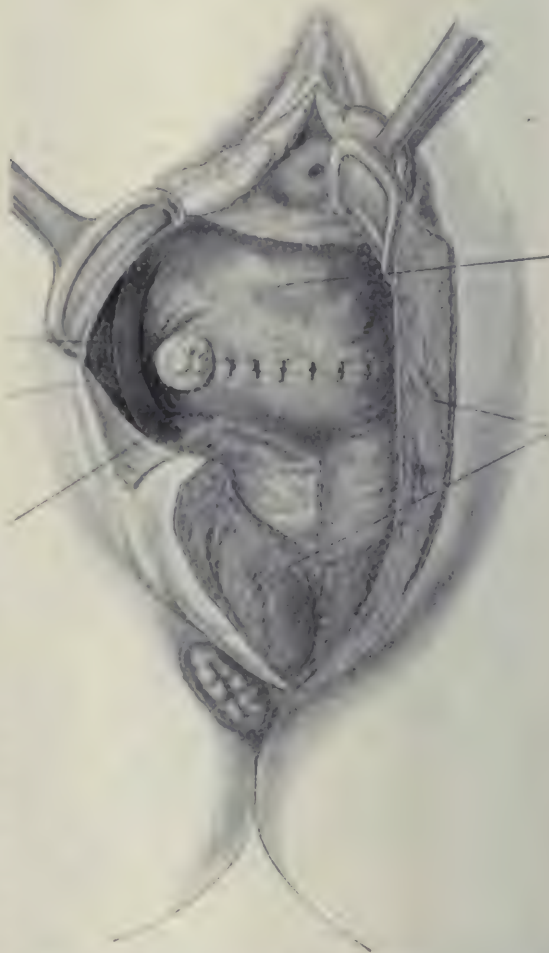


Fig. 5. The operation is finished. Peritoneal sutures tied. In the illustration one sees the stump of the broad ligament fixed in the right corner of the peritoneal edges, the curve of the right ureter and the stump of the uterine vessels of the right side. There remains only the suture of the perineo-vaginal cut to be made.

<sup>1</sup> Schauta, Monatschr. f. Geburts. u. Gynäk., 1911, xxxiii, 680. In ten years' experience, 910 patients applied to clinic (not including cancer of the body); 44 refused operation; 445 were operated on (51.3 per cent operability); 40 died (8.9 per cent mortality). The mortality, however, within the last 3 years has been reduced to 3.7 per cent.



that the parametria infiltrated even to the pelvic walls may not be carcinomatous, while at times even apparently free parametric tissue may contain carcinomatous foci. He regards extension toward the bladder as the gravest prognosis, and cystoscopic findings of bullous oedema, protrusion of the trigone, and displacement of the ureter add to the gravity of the condition, though not absolute contraindications, on account of the possibility of resecting the base of the bladder. The mortality, however, is high.

Schauta, after having had 101 operable and 57 inoperable cases cystoscoped, gives it as his opinion that cystoscopy has no decided value in determining the operability of the case. He does not regard the involvement of the vagina any contraindication, since it is possible to remove the entire vagina.

**Mortality.** He divides his cases into three classes:

1. Easy cases in which the parametrium was free, of which there were 79.
2. Those with infiltrated parametrium, including 126 cases.
3. Border-line cases as to operation, 53.

In 1901-2, 56 cases, a mortality of 19.1 per cent.  
 In 1902-3, 30 cases, a mortality of 3.4 per cent.  
 In 1903-4, 41 cases, a mortality of 10.8 per cent.  
 In 1904-5, 53 cases, a mortality of 8.1 per cent.  
 In 1905-6, 55 cases, a mortality of 12.2 per cent.  
 In 1906-7, 51 cases, a mortality of 8.5 per cent.

Total..258 ..... 10.8 per cent.<sup>1</sup>

He compares this mortality with that of ordinary vaginal hysterectomy, and states that there is practically no difference; giving in evidence the following statistics:

Ordinary vaginal hysterectomy

Schauta.....	10.3 per cent.
Güsserow.....	14.4 per cent.
Olshausen.....	12.7 per cent.
Fritsch.....	6.6 per cent.

Eight cases died of sepsis, eight of pulmonary complications, and two of thrombosis.

**Injuries to the bladder and ureter.** He states that in no instances were the ureters injured in easy cases. In grave cases, 126 in number, there were injuries to the ureter in 6 cases, or 4.7 per cent. In cases on the border line of operability, 53 in all, the ureters were injured in 5 instances, or 9.4 per cent.

In all cases, injuries of the bladder and the ureters was 8.5 per cent. He compares this with ordinary vaginal hysterectomy, in which like injuries are 5.6 per cent (Döderlein and Krönig, 1907).

**Permanent cures.** Schauta divides his cases into those who have been under observation for 2, 3, 4, and 5 years, and states that 77.7 per cent of all recurrences occur within the first two years. If

no recurrence has taken place within this time he believes the probabilities of the cure are most encouraging. His results are as follows:

- After 2 years 47.2 per cent had no recurrence.
- After 3 years 43.7 per cent had no recurrence.
- After 4 years 44. per cent had no recurrence.
- After 5 years 38.2 per cent had no recurrence.

**Absolute efficiency.** His absolute efficiency, reckoned according to Winter's formula for cases having no recurrence after five years, is 12.6 per cent.<sup>2</sup>

**Gland removal.** In 60 post-mortem examinations on cases having uterine cancer (distributed as follows: Dying from operation, 11; from other causes, 9; from cancer, 40) he found that of the 40 dying from cancer and without operation 43.3 per cent were free from carcinomatous metastasis in the glands. Of all 60 post-mortems, 23 showed no pelvic or aorta glands were involved, 8 showed involvement of the pelvic but not of the aorta glands, 21 showed "involvement" of both, and 5 showed involvement of aorta glands only. Of the 34 cases of gland involvement, only 8, or 13.3 per cent, could have been benefited by regional gland removal.<sup>3</sup>

Schauta's deductions from the above studies are that, in general, gland removal is not of material benefit to the patient.

A detail of the findings, operations, and recovery of each of the 258 cases reported is given in full.

LEROY BROWN.

## ADNEXAL AND PERIUTERINE CONDITIONS

**Primrose: Hæmorrhage into the Peritoneal Cavity Caused by Accidental Rupture of the Ovary.** *Univ. Toronto M. Bull.*, 1912, i, 18.

By Surg., Gynec. & Obst.

The author records two cases which were not connected with pregnancy. In both what appeared to be a normal Graaffian follicle had ruptured as a result of an accidental strain. In the first case the patient lifted a heavy weight and the rupture occurred immediately. In the second case the patient had a violent attack of vomiting in the early stage of an acute appendicitis and the rupture occurred then. In both there was a serious hæmorrhage into the peritoneal cavity, nearly proving fatal in one case. The author attributes the rupture to the fact that the ovaries were congested because the women were within two days of the menstrual period. The Graaffian follicles were under tension at that time and the increased abdominal strain was sufficient to cause their rupture.

<sup>2</sup> Schauta, *Monatschr. f. Geburts. u. Gynäk.*, 1911, xxxiii, 680. During the first five years of the ten-year period covered by this paper, 477 applied at his clinic; 211 were operated on; with non-recurrence in 73 after five years, or 39.7 per cent, giving an absolute efficiency of 16.6 for all cases seen in this period.

<sup>3</sup> Wertheim states in his admirable monograph, 1912, reporting the results of operations by the abdominal route on 500 cases, that in instances of involvement of the lymph glands the outlook is gloomy, there being 87 per cent recurrences. In other words, only 13 per cent were benefited. This is a remarkable agreement with the results of Schauta's study.

<sup>1</sup> In *Monatschr. f. Geburts. u. Gynäk.*, 1911, xxxiii, 680, he states that in 445 cases his mortality was 8.9 per cent, and that within the past three years his mortality has been 3.7 per cent.



The author urges that more attention be paid to the rupture of a Graaffian follicle as the cause of internal hæmorrhage in women. He believes that it is more frequent than the majority of text-book writers lead us to infer. In ectopic pregnancy he advises examination of both ovaries, as the one not connected with the pregnancy may have a ruptured follicle. The diagnosis between this condition and ectopic pregnancy is not always easy and the final decision is often made when the abdomen is open.

E. L. CORNELL.

**Polak: A Further Study of the End Results of the Conserved Ovary.** *J. Am. M. Ass.*, lix, 2138.

By Surg., Gynec. & Obst.

Polak attempts in this paper, from a study of 229 personal cases, to differentiate between and draw conclusions from the end results of the resected as compared with those of the conserved ovary. He furthermore calls attention to the lack of a thorough understanding of the living pathology of the ovary and its supports, and of the failure to appreciate that the position of the conserved or resected ovary is the important factor in its subsequent behavior.

The natural and proper conservation of the ovary consists in leaving it alone, or of placing it in such a position that there is no obstruction to its afferent and efferent circulation, or twisting of its ligament.

Interference with the efferent circulation is rapidly followed by changes in the ovarian structure, such as swelling from passive congestion, increase in stroma, thickening of the tunica and cyst formation.

As a result of his analysis he draws the following conclusions:

1. Only healthy ovaries should be conserved.
2. The right ovary when conserved is less prone to subsequent inflammatory changes than the left.
3. All retained ovaries or portions of ovaries should be placed in such a position, that their circulation is not interfered with.
4. Resection gives the best results when its application is limited to large monocysts, retention cysts, fibroids and dermoids.
5. The multiple cystic ovary should not be resected. Leave it alone or take it out.
6. A resection should be extensive. The suture line should just be approximated, not constricted, and covered with a reflexion of peritoneum.

**Andrews: Ovarian Teratoma Containing Brain and Well-Formed Intestine.** *Proc. Roy. Soc. M.*, 1912, vi, 54.

By Surg., Gynec. & Obst.

M. Z., aged 29, six children, last one year ago; pain in abdomen. Operation was performed and tumor of right ovary, size of tangerine orange, and a left ovarian cyst were removed. Inside the tumor there was a quantity of sebaceous material and some hair. The wall of the cyst for the most part was smooth and white. An area about 5 cm. in diameter was occupied by the following structures: (1) In the center was a nodule 1.5 cm. by 1 cm., hav-

ing a smooth, slightly convoluted surface of yellowish color and suggesting brain; (2) encircling this was a rounded ridge which had a pitted, white epidermal surface from which sprouted numerous black hairs; (3) from one extremity of this ridge there rose a tubular structure which projected into the cyst but was attached by a mesentery. At the base of this tube the knife struck bone.

Sections of the first area showed a quantity of nerve tissue in which there were glia cells with an abundant network of fibrils. There were also numbers of nerve cells of various sizes and shapes; also some tubular portions of neural canal lined by small cubical epithelium. From the surface of the nervous tissue a nerve root passed beneath the narrow layer of dermis and epidermis. It had a fibrous sheath and passed to a large ganglion. A transverse section through the tube showed all the layers of the gut wall, with a nerve ganglion between the coats.

C. H. DAVIS.

**Huffman: A Malformation of the Fallopian Tube.**

*Surg., Gynec. & Obst.*, 1912, xv, 680.

By Surg., Gynec. & Obst.

The tube in this case was removed from a virgin in conjunction with a fibromyoma of the uterus. From its external appearance the tube might have passed for normal, but more careful inspection showed a double lumen in the region of the inner half of the ampulla. While two tubes were here evident the diameter of the two together did not exceed that of a normal tube. From the posterior aspect the posterior tube appeared to end blindly at the junction of the anterior with the isthmus, but serial sections revealed an anteroposterior communication between the two. Both tubes communicated directly with the outer portion of the ampulla. Each had separate well developed circular and longitudinal muscular walls, but both were held together by a common subserosa and peritoneal coat. The mucosa in each appeared normal.

Huffman reports this case as of interest not only embryologically but as well with respect to tubal pregnancy. The implantation of the ovum in an anomalous embedding area is no doubt of some etiological significance. Another point of interest in regard to anomalies of the tubes is their association with fibromyomata of the uterus, as was the case in this instance.

CAREY CULBERTSON.

## MISCELLANEOUS

**Bovée: The Application of Iodine to the External and Internal Generative Organs of Women in the Treatment of Infections and Preparation for Surgical Operations on the Same.**

*Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

The conditions in which this treatment was applicable were given by Bovée as follows: (1) Acute infections of the vulva, vagina, urethra, and



the whole of the endometrium. (2) Acute peritoneal infections with proper limitations. (3) Chronic conditions following infections of these structures and of the tubes, ovaries, and pelvic peritoneum. (4) In pelvic surgery requiring examinations, manipulations, or operations on or through the vagina. (5) In such procedures as required opening the cervical canal or uterine cavity from either the vaginal or peritoneal side. (6) As a routine method of preparation of the field of operation on all these structures, as well as the rectum.

For several years he had confined the treatment of recent and remote Neisserian infection of the vulva, urethra, vagina, and cervix to the application of iodine. He had great confidence in the efficacy of this remedy when applied early. If the condition might be treated before the infection had passed into the uterine cavity or the glands of Bartholin, it could often be eradicated by one thorough painting of the exposed areas below the uterine cavity. If the first application failed, a second made three days later commonly succeeded. In pelvic surgery that required examinations, manipulations, or operations on or through the vagina, this plan of local sterilization was far superior to any other he had used. The importance of the vaginal application of iodine was emphasized in the radical operation for cancer of the cervix uteri. The high mortality from infection of the peritoneum, as a result of breaking of the specimen during its removal and the resulting leakage, was a striking feature of the recent report of Wertheim's work in this field. This sad complication was best obviated by the use of the iodine in both the vagina and endometrium, preceded by galvanocauterization, with or without curettement, if excrescences or craters be present. Since the etiology of cancer was not known, he would warn against driving any cancer material beyond the uterus by employing considerable pressure in injecting that organ.

E. S. TALBOT, JR.

**Ferguson: Twentieth Century Problems in Relation to Marriage and Childbirth.** *J. Obst. & Gynec. Brit. Emp.*, 1912, xxii, 317.

By Surg., Gynec. & Obst.

This article, Dr. Ferguson's presidential address before the Edinburgh Obstetrical Society, is largely philosophical in nature but concludes with statistics on puerperal infection and accidents of labor that are well formulated:

#### DEATHS FROM PUERPERAL SEPSIS (ENGLAND AND WALES)

1901	2.24 deaths per 1000 births
1902	2.14 deaths per 1000 births
1903	1.82 deaths per 1000 births
1904	1.80 deaths per 1000 births
1905	1.88 deaths per 1000 births
1906	1.80 deaths per 1000 births
1907	1.66 deaths per 1000 births
1908	1.46 deaths per 1000 births
1909	1.64 deaths per 1000 births

a decline of 30 per cent from the death rate of 1901.

#### DEATHS FROM ACCIDENTS OF CHILDBIRTH (ENGLAND AND WALES)

(Not including puerperal deaths where kidney, cardiac, pulmonary, or other intercurrent affections produced fatal results during pregnancy, and which are included in Scottish puerperal statistics.)

1901	2.49 per 1000 births
1902	2.34 per 1000 births
1903	2.33 per 1000 births
1904	2.14 per 1000 births
1905	2.34 per 1000 births
1906	2.27 per 1000 births
1907	2.24 per 1000 births
1908	2.09 per 1000 births
1909	2.14 per 1000 births

#### ALL DEATHS FROM PUERPERAL SEPSIS AND ACCIDENTS OF CHILDBIRTH (ENGLAND AND WALES)

1901	4.65 per 1000 births
1902	4.54 per 1000 births
1903	4.09 per 1000 births
1904	3.93 per 1000 births
1905	4.20 per 1000 births
1906	4.04 per 1000 births
1907	3.90 per 1000 births
1908	3.67 per 1000 births
1909	3.77 per 1000 births
1910	3.56 per 1000 births

Annual death-rates from puerperal sepsis and accidents of childbirth to a million persons living in successive quinquennia, 1876-1910 (England and Wales), were as follows:

For the 5 years.

1876-1880	142.0
1881-1885	165.0
1886-1890	142.6
1891-1895	167.8
1896-1900	137.6
1901-1905	120.4
1906-1910	97.8

During the 10 years 1897-1906 puerperal fever and the accidents of pregnancy and childbirth caused the death of 1 mother to every 228 births in England and Wales.

1907	1 mother to every 261 births.
1908	1 mother to every 280 births.
1909	1 mother to every 270 births.

#### REPORT OF M. O. H. FOR GLASGOW, 1911.

Attended by	Births	Puerperal Fever Cases	Rate per 1000 Births
Doctors	10,399	31	3.0
Midwives	12,446	82	6.6
	22,845	113	4.8

#### REPORT OF M. O. H. FOR GLASGOW, 1911.

Attended by	Births	Puerperal Fever Cases	Rate per 1000 Births
Doctors	10,353	44	4.2
Midwives	12,133	89	7.3
	22,486	133	5.7



Showing relative proportion of confinements attended by medical man and midwife (certified and uncertified) in the undernoted places.

Glasgow.....	46	54
Perth.....	72.7	27.3
Ayr.....	50.6	49.4
Renfrewshire.....	82.1	17.9
London.....	75—	25.+
Derby.....	about 25	75
Coventry.....	20	80
Liverpool.....	26	74
Nottingham.....	45	55
Average of above.....	50.8	49.2

CAREY CULBERTSON.

**Norris: Sterility in the Female without Marked Gross Pathology; Report of Thirty-five Cases.** *Surg., Gynec. & Obst.*, 1912, xv, 706.  
By Surg., Gynec. & Obst.

Norris considers that a marriage may be considered sterile at the expiration of two years where no children have been born and no means employed to prevent conception. The responsibility of the husband is rated variously, according to different investigators but statistically it varies from 16 to 50 per cent. Sterility may be primary or acquired, absolute or relative. In the United States in 1900 twenty per cent of native marriages were unfruitful while among the foreign element this proportion was reduced to thirteen per cent.

Congenital malformation of the genital tract is the most frequent cause of sterility. The uterus is probably most often at fault, the infantile type being most often encountered. Stenosis of the cervical canal is not infrequent. Antelexion and narrowing of the upper portion of the vagina is frequently associated with hypoplasia of the uterus which is also present where there are disturbances of the various internal secretions of the hypophysis, thyroid, adrenals, etc. Stenosis of the cervical canal and antelexion of the uterus are also accountable for a certain proportion of cases. Mild cervicitis, providing a plug of thick tenacious mucus, is occasionally present as a cause for sterility, as is the so-called endometritis fungosa. Mild forms of salpingitis, vaginismus and spasm of the uterine ligaments are other causes mentioned where pathologic lesions are not marked.

Under treatment, the author discusses dilatation of the cervix and the Pozzi and Dudley operations, and strongly favors the stem pessary as devised by

Carstens or Wylie. He regards the objections to this instrument as greatly overestimated. The importance of thorough cervical dilatation preceding the introduction of the pessary is emphasized, as is the necessity of first excluding the possibility of pelvic inflammatory disease and any form of gonorrhœa. Curettage at this time is deemed unwise, as are subsequent douches.

Of the thirty-five cases possessing such minor defects as are here discussed, all of whom were sterile for from two to twenty-eight years, thirteen conceived. Pregnancy occurred in three while the pessary was in situ. Seven of the failures have been operated upon less than one year and in some of the earlier cases the fecundity of the husband had not been proven.

Norris' conclusions are as follows: (1) One in every seven or eight marriages is sterile. About fifty to seventy-five per cent of these are due to sterility of the woman. (2) Sterility may be the result of a variety of causes, both local and general. The success of the treatment depends upon the correct diagnosis of the etiological factor present in each case. (3) Excluding gonorrhœa, the three most frequent local causes productive of sterility are hypoplasia of the uterus, constriction of the cervical canal or a mild grade of cervicitis. (4) The routine practice of subjecting all cases of sterility to some form of dilatation operation, often without even ascertaining if the woman be the partner at fault, cannot be too severely condemned. (5) When hypoplasia of the uterus, a constriction of the cervical canal, or antelexion is present, the stem pessary offers an excellent means of treatment. It produces permanent dilatation, as proven by the fact that it cures more than eighty-six per cent of cases of expulsive dysmenorrhœa. The stem pessary tends to produce development in those cases of hypoplasia of the uterus and by the drainage secured, often cures, and in all cases facilitates the treatment of endocervicitis of non-gonorrhœal origin. It also straightens out flexions. In the gynecological department of the Hospital of the University of Pennsylvania, this form of treatment has been successful in thirty-seven per cent of cases of sterility. (6) No ill effects have followed this form of treatment in any of the cases operated upon for either sterility or dysmenorrhœa. This now comprises a large series of cases. It is essential that gonorrhœa and the various forms of pelvic inflammatory disease be excluded.

CAREY CULBERTSON.



[**Monograph.**] **Gauss and Lembcke: Deep X-Ray Therapy, Its Theoretical Principles, and Its Clinical Results** (Röntgentherapie, ihre theoretischen Grundlagen, ihre praktische Anwendung und ihre klinischen Erfolge). Universitäts Frauenklinik, Freiburg. Berlin and Vienna: Urban & Schwarzenberg, 1912.

By Surg., Gynec. & Obst.

The use of ill-adapted X-ray tubes has been principally to blame for the tardy development of penetrative therapy. Soft and medium soft tubes allow of no effective raying of deep-lying ovaries. Perthes, in experimental work, was able to show that rays from hard tubes decreased less in quantity according to the depth than those from soft tubes. According to Wetteler's experiments, one erythema dose with medium soft rays gives at a depth of 1 cm. 60 per cent, 2 cm. 45 per cent, 3 cm. 30 per cent; and with hard rays 75, 55, and 40 per cent respectively; moreover, in the latter case, at the depth of 4 cm. 30 per cent, and at 5 cm. 25 per cent were found to be still present. The use of medium soft tubes, which up to that time prevailed, has been generally given up, although many authors (H. E. Schmidt, Berlin) since 1909 speak against the use of hard tubes and filters.

An increase in the hardness of a tube above 12 We. is practically impossible; the use of ray filters, however, affords a different way of producing the same results.

The possibility of increasing deep action in radiotherapy, made known by Perthes in 1903, by separating the soft from the hard rays with a tinfoil or aluminum filter, led to the determination, in 1904, that 1 cm. tissue or 1 cm. water absorbs the same amount of rays as 1 mm. aluminum. Leather or skin filters proved effective only with medium hard tubes. Water and air filters have never been used. Among the effective filters may be mentioned glass, tinfoil, and silver (v. Jaksch, 1909). Aluminum, particularly recommended by Walter, was first used to a large extent by Bordier and Guilleminot. According to Guilleminot's experiments, a large proportion of the unfiltered rays were absorbed in upper layers, and in deep-lying tissue very little. According to him, deep-seated tumors require therefore nearly uniform or monochromatic rays. A 5 mm. aluminum filter is sufficient for practical purposes. Prof. Barkla of King's College, London, regards ionization as the principal cause of the changes in substances subjected to X-rays: the rays work on superficial tissue more strongly than on that which lies deeper. The rays which reach the latter are penetrative and lose the largest part of their energy through dispersion, not through absorption. In order to counteract this and to increase the intensity of the action and to localize it, he proposed injections of a substance which contains a heavy metal. This allowed only a small percentage of the rays to penetrate, but transformed them into secondary rays which are more intensely ionizing. By injecting into the tissues finely divided bismuth carbonate he brought about thirty to forty times more ionization than in tissues which had not been so impregnated. Christen, who amplified this method, is able, theoretically, to

cause the absorption of the optimum dose at a given depth.

The experiments of the authors in the technique of filters extends to (1) morocco leather, (2) satrap paper (the skin remaining free from an otherwise present erythema under the Kienböck paper, which is made of satrap), and (3) aluminum plates 3 mm. thick.

With a superficial dose of 10X from soft tubes, there was absorbed in the first centimeter without filter 8X, with leather 6.2, with satrap 5.5, aluminum 3, aluminum and leather 3.5, and aluminum and satrap 3.3; with hard tubes the corresponding figures were 4.5, 4.6, 3.8, 2, 2, 2. The use of hard unfiltered rays is thus much less dangerous than soft rays, and weak filters cannot greatly diminish the danger of burns; therefore it is necessary to use strong filters for real protection of the skin. Satrap, which as well as leather increases the filter action, is used only to avoid the secondary rays from the aluminum filter.

With the decrease in the injuries to the skin goes hand in hand an increase in the effect to be had in the depth, according to the kind of filter. Experiments upon an aluminum model showed that with an application of 10X there was absorbed at the depth of 1 cm., without filter 4.5X, with 3 mm. aluminum filter 2.2X; at a depth of 8 cm., without filter 0.2X, with 3 mm. filter 0.6X. Theoretically, one can thus give, with the filter, 20X superficially before the absorption of 4.5X takes place in the first centimeter. With this increase we should then get 1.2X at a depth of 8 cm. instead of 0.2X, i. e. six times the former dose, even without risking erythema. With soft tubes (6 to 7 We.) without filter, there was absorbed in 1 cm. 8X; the remaining 2X was reduced at a depth of 2 cm. to 1X, and at 4 cm. only 0.5X was left. The expression "dose-quotient" signifies the ratio between the quantity absorbed in the depth and the superficial dose. The greater it is, the less is the penetrative effect in the depth. In the above experiment the quotient at the depth of 4 cm. is 40, and at the depth of 8 it is  $\infty$ . With four thicknesses of chamois the dose-quotient at 4 cm. is 12.4, at 8 cm.  $\infty$ ; with satrap, 11 and  $\infty$  respectively. Aluminum filters leave at the depth of 1 cm. 7X still unabsorbed, at 2 cm. 5.5X, at 8 cm. 0.7X, a dose-quotient of 5.20. There takes place, therefore, at the same time with the considerable protection of the skin, a large increase in the penetrative dose. With the aluminum plate plus the chamois there remains after the first centimeter 6X, after the second 5.5X, and at 8 cm. 0.7X (a dose-quotient of 5.7 — about the same as with aluminum alone). Aluminum and satrap allows at 1 cm. 6.8X, at 2 cm. 6X, at 8 cm. 1.2X, i. e., a decrease in the penetrative action; the dose-quotient 6.4. With soft rays a weak filter increases



but little the penetrative effect; strong filters increase it considerably.

Unfiltered rays from hard tubes give at the depth of 1 cm. 5.5X, at 2 cm. 4.5X, and at 8 cm. 0.7X. The superficial absorption is thus considerably less than with unfiltered rays from soft tubes, but still greater than when the soft rays have passed through a strong filter (dose-quotient, 22.5); with similar dosage in the depth, the unfiltered hard rays allow less protection of the skin and more superficial absorption than the strongly filtered soft rays, yet they are better than the unfiltered soft rays. With chamois filters, at 1 cm. we get 5.4X, at 2 cm. 4.3X, and at 8 cm. 0.8X, a dose-quotient of 23. As one will see, this filter has little effect. With satrap filters, at 1 cm. 6X, at 2 cm. 5X, at 8 cm. 1.3X, a dose-quotient of 19, which is somewhat better.

With the aluminum filter, at 1 cm. we get 7.8X, at 2 cm. 6.5X, and at 8 cm. 1.2X, a dose-quotient of 3.7. This represents a tremendous increase in the penetrative action, with a great protection of the skin. The addition of chamois skin gives respectively 8X, 6X, 1.7X, a dose-quotient of 3.3, an improvement upon the preceding. Aluminum with satrap gives 8X, 6X, 1.8X, a dose-quotient of 2.1, which is even better.

Aluminum was chosen because comparative experiments with tinfoil and glass showed plainly its superiority (silver is not to be considered because of the soft secondary rays which it gives off). Tinfoil is not at all sufficient for a depth of 8 cm.; the dose-quotients of aluminum and glass are in the ratio 4:3.

As far as the time is concerned which one needs to produce a superficial dose of 10X, soft and hard tubes, without filter, require 200 and 155 seconds respectively, with leather filters 240 and 175 seconds, with satrap 1260 and 250 seconds, with aluminum 1800 and 350, with aluminum and leather 1860 and 345 seconds, with aluminum and satrap 2190 and 350. The stronger and more effective the filter, the more time is necessary. Hard rays with and without filter give the desired superficial dose more quickly. Hard tubes are thus to be preferred. The optimum thickness of the filter was also determined by means of the aluminum model. A hard tube 10 We. was run at 4.5 to 5 milliamperes at a distance of 20 cm. from the model. In the supposition that injuries to the skin are brought about by absorption in the upper cms. of the body, that kind of ray is the best which is least absorbed in the upper layers. With an aluminum plate of 0.5 mm. 3.8X were absorbed, with 1 mm. 3.6X, 1.5 mm. 3X, 2 mm. 2.6X, 3 mm. 2X, 4 mm. 2X, 5 mm. 3X, 6 mm. 2.8X, 8 mm. 3.5X, and 10 mm. 3.6X. Using hard rays, there was absorbed in the first cm., without filter 4.5X, with chamois 4.6X, with satrap 3.8X, with 3 mm. aluminum filter 4.5X. This means that 0.5 mm. aluminum protects a little, 1 mm. not much more, up to 2 mm. a little increase, 3 and 4 mm. show, however, decided skin protective quality, which decreases again with the stronger filters. With a skin thickness of 4 mm., under which a fur-

ther injury to the skin is not to be expected, there is absorbed with a superficial dose of 10X, without filter 2X, with satrap 2X, 0.5 mm. aluminum 2X, 1 mm. aluminum 2X, leather 2X, 1.5 mm. aluminum 1.4X, 2 mm. aluminum 0.5X, 3 mm. aluminum 0.5X, 4 mm. aluminum 1X, 5 mm. aluminum 1X, 6 mm. aluminum 1.5X, 8 mm. aluminum 1.5X, 10 mm. aluminum 2.5X. The best protection to the skin accordingly is between 2 and 5 mm. aluminum.

The penetrative action is influenced by filters in the following manner: With 1.5 mm. filter at a depth of 8 cm. the dose-quotient is 11.3, with 1 mm. 18, with 1.5 mm. 15, with 3 mm. 6.6, 4 mm. 5, 5 mm. 5, 6 mm. 5.6, 8 mm. 7, and 10 mm. 7.2. The dose at this depth increases with 0.5 up to 3 mm. from 1X to 1.5X, with a 3 mm. filter up to a 10 mm. filter it remains 1.5X. However, one requires with a 3 mm. filter to obtain 10X, 360 seconds, and the time required increases with the thickness of the filter till at 10 mm. 900 seconds are required. A filtering of the rays with a 3 to 4 aluminum filter costs least in time and money.

Werner found that the action of the X-rays is in many ways to be regarded as an influence on the chemistry of the body cells. In spite of this fact the chief point of attack in X-ray therapy will probably remain the ovaries, though their location is often variable or unknown. It therefore seems necessary to obtain the largest possible absorption of ray units at several different depths. Experiments have been carried out on an elaborate recording apparatus with rhythmical interruption and a rotating aluminum filter which consisted of segments of different thicknesses, making 200 to 250 revolutions a minute. In comparison with experiments made with fixed filters, it was shown that the rotating filter is better adapted to reach all layers of tissue than is the fixed filter, and therefore, the depth of 2 to 8 cm. The best partition of the rotating filter is made with segments of 3, 5, 8, and 10 mm. thickness; the skin is also better protected, for only 0.8X is absorbed in the first cm.

Plant experiments were undertaken, as well as those with animals, to put to the test the difference in action of filtered and primary rays. Young bean plants (*Vicia faba* L.) proved in preliminary experiments to be very sensitive to X-rays. A series of experiments showed that the plants were much more damaged by filtered than by unfiltered rays, the degree of damage increasing with the thickness of the filter. Less damage was done to plants rayed without filter. Experiments on tadpoles showed that they were sufficiently sensitive. A definite dose of unfiltered rays which did not kill them proved when filtered to be deadly. Animals of the same origin and size being used, a strong filter (5 mm.) proved to give a relatively low lethal dose. With white mice the optimum filter thickness seemed to be between 3 and 10 mm. From all these experiments it seems necessary therefore to use only hard rays if one wants good results in the penetrative therapy.



In order to bring about the desired biological effect, an increase in the quantity as well as the quality of rays must be made. The limitation on the application of the X-ray caused by erythema led Levy-Dorn in 1904 to the choice of several points of entrance, thereby hoping to bring about a summation of the penetrative action with protection to the skin.

The secondary rays which were described by Röntgen in 1897, and which he explained as a charging of the neighboring air, were also subjected to experiment. A repetition of his interesting work confirmed completely his observations. This was particularly noticeable when a stronger filter (zinc) was used to increase the light, and thereby the secondary ray, absorption, instead of the air filter referred to by Röntgen. Experiments with tadpoles in a weak collargol solution (1:2500, on account of the intense secondary rays of the silver) showed that the action of both kinds of rays is increased both within and without the body by the choice of an appropriate ray transformer (silver).

In order to make the secondary rays applicable to patients, a model was made to simulate the body, on which experiments were carried out. Two tallow plates 3.5 cm. thick were used. Above and below each was placed a Kienböck slip, and the whole was rayed under a 3 mm. aluminum filter from a distance of 3.5 cm.: the difference between the colors of the two lower Kienböck slips was no greater than in corresponding experiments carried out on a model surrounded with lead. The secondary rays given off by the lead seem to have been absorbed by the tallow plates which correspond to flesh and blood. Experiments with collargol on human beings are not yet completed.

The increase in the ray dose by means of bringing the tube closer to the patient is limited by the erythema. If we reckon the intensity at 100 when the cathode is 10 cm. distant, the intensity at 15 cm. will be 44.44, at 20 cm. 25, at 25 cm. 16, at 30 cm. 11. In spite of this, the misproportion between the superficial and penetrating dose is so great as to forbid bringing the tube too near. The ideal focus-skin distance, according to Wetterer-Dessauer, is infinity; for practical purposes, a minimum of 1 M., which, however, with hard tubes would consume a tremendous amount of time. Albers-Schönbergs struck upon a compromise at 38 cm., taking into account that the greatest difference in intensity occurs between 10 and 30 cm. (Perthes). The unfavorable results with this method led to a spacing off of the area treated into several fields. A much more effective means of increasing the penetrative action is to combine the use of filters with the increase of the points of attack.

Werner regarded application of the necessary therapeutic dose within a short period of time not only as possible but as very important. This intensive therapy is amply justified by the failures made by all methods which do not use this principle. Too small a dose brings about undesirable stimu-

lating effects, and has also the drawback of giving many more recurrences.

The great difference in the kind of rays used in diagnosis and in therapy makes necessary a radical alteration in the apparatus itself. Diagnosis requires complex rays; therapy, homogeneous. Instead of a spark transformer, a spark inductor is used to transform currents from low to high tension. Continuous action of the apparatus is made possible by a specially constructed regulator, which allows the tubes to regenerate, an appreciable pause being made after each induction contact in a flickering manner. The gases in the tubes are thus able to maintain a constant resistance to the "closing current." In order to give the focus point on the cathode time to cool off one brings into use, in addition to the mechanical "record" interrupter, a rhythmical interrupter which is placed in the primary current, and which can be regulated with long or short pauses according to the condition of the tube used. The tubes of Müller model, "penetrans," allow of a decrease in the focus-skin distance by special construction, the cathode being placed near the under surface of the tube, though the vacuum conditions are maintained. The four oldest tubes which are used in the Freiburg clinic and which are still usable show an average use of 89 "light hours" under a regular employment of 5-12 milliamperes.

Whereas formerly 25 minutes were required to get 10X with 3 mm. aluminum filter, focus distance 20 cm. and secondary current of 3 milliamperes, with the use of the rhythmical interruption and 5 milliamperes current only 7 minutes are necessary, and with 10 to 12 milliamperes 2 to 3 minutes. In spite of giving up the five-minute change in tubes formerly made, and the increased secondary current, damage to the tubes occurs now less often than formerly. The loss of rays which was feared by many did not occur; on the contrary, the penetrative effect is somewhat increased.

Concerning the action upon the skin, there occurred with the technique of Albers-Schönbergs, i.e. 38 cm. focus-skin distance and 2 to 4 layers of leather filter, injuries to the skin in 15.5 per cent of the cases. Using the intensive therapy with a focus-skin distance of 20 cm., the erythema dose of 10X could be increased even up to 40X before injury to the skin took place.

The end result itself, with the intensive therapy, appeared oftener and more quickly than before and was more often lasting; i.e., among the 102 patients which in the last year and a half received this treatment there is not a single failure. The time consumed with the old method without filter averaged five treatments in eleven weeks (with aluminum filter, 3 sittings in six weeks). Shrinkage of the myoma itself, much doubted by many, took place without the slightest doubt, and was so obvious that not only the physician but the patient herself could notice it. Of 36 myomata examined nine months after treatment, 20 had entirely disappeared. The



general feelings of the patient suffer little during the intensive therapy. One can hardly speak of an inordinate demand on her strength; many patients read, others often enough go to sleep during the treatment. The so-called "Röntgenkater" (Katzenjammer) consists of headache, backache and nausea, and has certain resemblances to the symptoms of dysmenorrhœa. It lasts at most from one to four days. According to Krinski's observations, it occurs most often when the dose given approaches 400X; if this dose is much increased in the first sitting, the Röntgenkater does not occur. At any rate, it is not to be considered comparable to the unpleasant symptoms attending operation.

The symptoms of the menopause (flushes, sweating, dizziness, palpitation, etc.), which indicate to a physician the approach of a cure, occur less often and are less persistent than in cases treated by operation.

The chief advantage of the intensive therapy is a smooth convalescence; two to three weeks after the first series the curative action is plainly to be seen, an observation which is made alike by patients and their family physicians.

To increase the effect of X-rays, hyperæmia and painting with eosin have been recommended: both methods are, however, too little developed. In order to desensitize healthy tissue, which must of necessity be rayed along with the other, the use of compression and cold has been advised, as also the exact demarcation of the skin areas subjected to treatment. Injections of adrenalin appear to be applicable only to fairly superficial tissue; up to the present time there can be little said of the anæmia produced by high frequency currents and the wire net method of Alban Köhlers. The use of radioactive substances in connection with X-rays in cases of myoma and menorrhagia seems to have a future worth considering, although a discussion of it here is out of place.

Lecethin is changed in the tissues by the X-rays into cholin, and as such is capable, when injected, of bringing about similar changes (chemical imitation of X-ray effects). Röntgen rays and radium form in the tissues, therefore, definite substances which bring about specific cell changes. The thought was not out of place that one can influence one part of the body by raying another part (indirect raying, or Fernbestrahlung). The experiments on this subject, which are not without contradiction, are as yet unfinished.

The practical application of the penetrative therapy accomplished only occasional results in the early days when the general principles of radiology were less known. A practical method was possible only after the pioneer experiments of Perthes. Dessauer tried, by placing the tubes at a great distance, to bring about as homogeneous a raying as possible (räumliche Homogenität). The soft rays which were also present in spite of the use of hard tubes, he tried to exclude by means of a glass filter (spezifische Homogenität). His method de-

manded 500 light seconds for the application of 10X. Albers-Schönbergs was the first to bring forward a theoretically good and practically useful method. He used tubes of 6 to 8 We. at a distance of 38 cm. with 2 to 3 milliamperes. The total length of each series was not to be over 18 minutes, and the highest dose on each area of skin 6 to 7.5X. He has recently given up his original one-field method. The use of many areas of application, which was recommended by Levy-Dorn, was systematically bettered by Werner. Fränkel constructed a special plate to fit the abdomen, in order to exactly localize the areas and to make use of the crossfire.

The Freiburg clinic has long made use of the crossfire principle. The tube, instead of being placed over the symphysis (Albers-Schönbergs), is placed on the right and left sides of the abdomen at an appropriate oblique angle. As further places of application the vagina and vulva were used, as also was the foramen ischiadicum, before which the ovaries often lie. Rays are also applied to the back. A further use is made of an increase in areas rayed. The skin of the abdomen is divided into fields according to the size of the object to be treated; thereby not only are the ovaries affected, but the tumor itself, changes in which have recently been shown by Robert Mayer, and the secondary rays from it act also on the ovaries. In cases of metropathia hæmorrhagica, a star-shaped arrangement of the fields is used, whose center corresponds to the fundus uteri.

The features which characterize the Freiburg technique in contrast to others are, the giving up of the "räumliche Homogenität" and the substitution of a quantitative and qualitative increase in the specific Homogenität. It consists in filtering with 3 mm. aluminum, a reduction of the focus-skin distance to 20 cm. and a crossfire by means of as many points of entrance as possible. It is quite different from the methods without filter or with weak filter, and is absolutely different from methods without the crossfire and small focus-skin distance which carry with them the danger of stimulant action and decrease the chances of a sure and lasting result.

The oldest method used in Freiburg (since 1906) employed medium soft tubes and a focus distance of 15 cm. A rubber air bag was used in the vagina to bring the uterus and ovaries nearer the surface and so decrease the ray dispersion. The secondary current was 2 to 3 milliamperes, and the sitting at first of 5 minutes; if no skin injuries appeared after 8 days, the patient received for one week 2 light-minutes every third day. The results were never satisfactory.

The technique of Albers-Schönbergs was hence gladly tried. Patients were rayed on the abdomen, at first on one, later on several fields, on 3 or 4 consecutive days, each time receiving 6 minutes, at 3 to 5 milliamperes, tubes 6 to 8 We., focus-skin distance 38 cm., and the time between series was 14 days. To protect the skin four layers of chamois were used, at times covered with tinfoil; the other



parts of the body were protected by the diaphragm and tube case. In 50 per cent of the cases amenorrhœa was obtained, which showed a great advance in the technique. Results appeared in about 3 months with the use of 55 light-minutes. In the other 50 per cent only oligomenorrhœa was produced. Under a continuance of the Albers-Schönbergs method, to which three fields were added, amenorrhœa was obtained in 71 per cent, in 5 per cent oligomenorrhœa, 2.5 per cent had relapses, 2.5 per cent were failures, and 19 per cent withdrew from observation. Amenorrhœa required 11 weeks, and an average of 189 light-minutes were used.

As the withdrawal of the patients was probably caused by the length of the treatment, and in consideration of the three relapses, the number of fields was increased to seven. The length of treatment in the seven-field method was about 3 months, somewhat longer, as patients that did not respond to the former treatment were included. The percentage of cures rose from 71 per cent to 76 per cent, 5 per cent oligomenorrhœa, 5 per cent relapses, and 14 withdrawals from treatment. The average actual time of treatment was 447 minutes. In spite of the important advance which the Albers-Schönbergs method brought, a cure of 71 to 76 per cent is not satisfactory. Since the upper limits of the superficial dose had nearly been reached, it became a question of better protection of the skin and better penetrating action, together with a shortening of the time of treatment. To this end the short-focus filter method, which was shown experimentally to be so effective, was used. With an average dose of 286X, amenorrhœa appeared on an average after 14 weeks, here also being included cases which were refractory to the older method. The following results were obtained on those cases which were handled entirely by the new method, the object in mind being a reduction of the number of series and of the length of treatment by increasing the penetrative dose. With an average of 909X no refractory cases were encountered, and the time was reduced to 9 weeks.

The improvement in the apparatus which had taken place during this time allowed the application of a greater dose in a given time, hence an increase in the size of the series required no corresponding increase in time; the treatment was shortened to 5 weeks, an average of 1480X was given, and the cures were 100 per cent.

The Röntgen therapy, formerly primitive, now built up in detail, is placed in competition with the operative treatment in cases of myoma and metropathy. Patients whose strength has been much reduced by repeated and continuous hæmorrhage are especially adapted to this treatment, and it is through treatment of just such cases that the mortality of the myoma operation is to be greatly reduced. As far as the length of treatment is concerned, the operative treatment demands 6 to 7 weeks for the restoration of the ability to work; the Röntgen treatment requires 8 weeks with the use

of filters, short-focus and many fields; with intensive therapy, 5 weeks, and at the same time the patient is never rendered absolutely unable to work. A further shortening of the treatment by using only one series is being tried; up to the present, cure has been brought about in a large number of cases.

Symptoms of the menopause were, of course, observed, though they were much weaker than after castration, and even after removal of the uterus alone. As accompanying manifestations, burns were observed, at first rather often; later, however, with improvement in the technique, burns of a serious nature have not occurred; even with Titian-blond patients, there was never a second degree burn. Late reactions, such as appear in the literature, are believed to be due to the use of too weak filters; at least the reported late reactions have great resemblance to those caused by soft rays. With strongly filtered rays no reactions have been noted over a period of 9 months. Since such lasting damage has not been seen after 4 years, the clinic thinks itself justified in continuing the treatment along the lines mentioned. The X-ray cancer, which still stands foremost in the physician's mind, is, as every radiologist knows, a result of chronic dermatitis alone, which has been caused by using X-rays year in and year out; for the patient it belongs to the realm of mythology.

A control of the cases treated up to 9 months ago shows that of 55, 54 are cured; the one failure belongs to the Albers-Schönbergs method. Of the 54 cases there were 45 amenorrhœa and 9 oligomenorrhœa; whereas with the Albers-Schönbergs method amenorrhœa was never obtained by women under 30 years; this was accomplished in 2 cases with the intensive therapy and in a space of time impossible by any other method. This cure of 97.2 per cent is obtained by differing methods, while the 24 cases with filter and short focus gave a cure of 100 per cent.

Greater demands are made on the better perfected treatment than on the old method with its cures of 50 per cent. Sarcoma and carcinoma cases must be excluded. The danger of inadvertently treating a malignant tumor is, however, small, for Olshausen reported among 6470 myoma 77, or 1.2 per cent, sarcomatous degeneration. Among 318 operated cases in the Freiburg clinic, Aschoff could find but 6, or 2 per cent, sarcomata. All uterus tumors which appear suspicious were subjected to a curettage, and were rayed if no malignant condition was found.

According to Krönig one should not use the X-ray therapy in cases where the tumor hangs by a pedicle, in those in the cervix lumen, in those suspected of being gangrenous, in those in combination with carcinoma, and in those where, through rapid growth, a metrorrhagia type of bleeding, or unsuccessful X-ray treatment, one has suspicions of sarcomatous degeneration; further, in cases which cause acute incarceration of the bladder. In all other cases radiotherapy is the method of choice.



# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

**Bacon: Pulmonary Tuberculosis as an Obstetric Complication.** *J. Am. M. Ass.*, 1912, lix, 2197.  
By Surg., Gynec. & Obst.

Bacon says that every year there are in the United States between 22,000 and 44,000 gravidæ with active tuberculosis. The effect of tuberculosis on the course of pregnancy is slight. The effect of pregnancy on the course of tuberculosis is dependent on many factors; however, if the patient gets through the first three months there is often an improvement in her condition, especially when the disease is in its early stages. In the puerperium tuberculosis usually becomes worse even in milder cases. Prophylaxis involves: (1) prevention of pregnancy in a tuberculous woman and (2) prevention of infection in a pregnant woman or in one liable to become pregnant, the danger here arising chiefly from a tuberculous husband. He discusses artificial sterilization, permanent and temporary, and interruption of pregnancy with methods of producing abortion.

The care of the mother and the protection of the child demand professional, philanthropic and state co-operation.

L. G. DWAN.

**Barchet: Pregnancy in a Diverticulum of the Uterus** (Gravidität in einem Uterusdivertikel). *Monatschr. f. Geburtsh. u. Gynäk.*, 1912, xxxvi, No. 6.  
By Surg., Gynec. & Obst.

This is the sixth known case of ectopic pregnancy in a diverticulum of the uterus. The patient was 39 years old. She had borne one child and had had 4 miscarriages in the fifth month. She had menstruated regularly up to 3 months before the atypical symptoms developed. While going to bed one night she suddenly was seized with cramps, nausea and vomiting. Upon examination the vaginal mucosa was blue-red, the portio stood in front of the spinal line and went over into a tumor the size of a fist. The adnexa were not palpable. The diagnosis was retroflexed, gravid uterus. It was brought up and held in place by a pessary.

Two months later the patient returned and stated that she had been bleeding intermittently during all that time. By vaginal examination the uterus was found to be the same size as two months before, but a bulging at the right side was plainly palpable. Dilation and subsequent digital examination showed the cavum uteri to be empty but an appending tumor the size of a fist was palpable. With a curved sound its communication with the cavum uteri was easily made out. The diagnosis was changed to pregnancy in a rudimentary horn or in a tube, and only the operation revealed the true

nature of the case. The tumor was excised and the incision in the uterus sutured. The right tube was not connected with the tumor. The sac was covered with peritoneum. The fœtus was macerated, the umbilicus and placenta were still present. The wall of the sac showed uterine structure.

L. W. SAUER.

**Maxwell: Case of Puerperal Eclampsia Treated by Cæsarean Section.** *Proc. Roy. Soc. M.*, 1912, vi, 43.  
By Surg., Gynec. & Obst.

Maxwell reports a case of eclampsia in a primigravida, aged 19, whom he delivered by Cæsarean section as she failed to respond to medical treatment. She had thirteen fits in ten hours and was unconscious after having the ninth. The operation was performed to end what was believed to be a placental toxæmia, and was carried out solely in the mother's interests. That the child was saved was regarded as a fortunate and rare coincidence. The operation would have been carried out even had the child been dead. He emphasizes the fact that chloroform should not be used in these cases. Before closing the abdomen two pints of normal saline solution with 10 per cent of glucose were poured into the belly.

No subsequent fits took place, and the mother made an uninterrupted apyreal recovery. A considerable drop in the patient's blood pressure set in after delivery, from 165 mm. hg. to 135 mm. Albumin, which had never been present in more than a faint cloud, disappeared entirely by the third day.

The indications which he would formulate for Cæsarean section in these circumstances are: (1) Fits occurring in a primigravida. (2) Onset of fits with no sign of the start of labor. (3) A rapid succession of fits, where consciousness is not regained and coma is deepening. (4) Failure of advance of cervical dilatation after several hours of an expectant attitude, with the prospect of many hours' delay before the second stage of labor is reached. (5) Absence of any definite signs of improvement after several hours "eliminative" treatment has been carried out.

He thinks the operation is justifiable in the presence of all five, otherwise there is not a definite indication for Cæsarean section.

Blacker, in the discussion, called attention to the fact that sedatives had not been used to control the fits. In his opinion it is impossible by any operative treatment to improve on the results by the expectant treatment which was employed by Stroganoff in 360 cases with a maternal mortality of only 6.6 per cent, and by Tweedy in 66 cases with a mortality of 9 per cent; while Roth has



recently published 31 cases treated in Dresden by Stroganoff's method with only one maternal death. He did not think Cæsarean section justifiable except in rare cases in which it was necessitated on other grounds, owing to the high mortality, and refers to the recent paper of J. F. Moran in which 116 cases of Cæsarean section are reviewed with a maternal mortality of 48.9 per cent and a foetal mortality of 39 per cent. He collected 53 cases of Cæsarean section performed during the years 1901 to 1911 for eclampsia, with a maternal mortality of 32.3 per cent and a foetal mortality of 19.9 per cent.

C. H. DAVIS.

**Wallace: The Suppression of the Convulsion in Eclampsia.** *Lancet*, Lond., 1912, clxxxiii, 1574.

By Surg., Gynec. & Obst.

The author refers to the most successful methods of controlling the convulsions: (1) *The chloroform, chloral, and morphia treatment* of Stroganoff, of St. Petersburg, whose reported results are truly astonishing. No doubt the drugs named have an influence in the treatment, but it should be pointed out that each patient is treated under conditions infinitely more favorable than have ever before been made use of, for she is placed at once in a totally darkened room that is isolated from all possibility of disturbance by external influences. His statistics of over 400 cases yield a maternal mortality of 6.6 per cent, as compared with the usual 20 to 30 per cent; and a foetal mortality of 21.6 per cent, as compared with 30 to 50 per cent. (2) *The use of hirudin.* Engelmann publishes the results of intravenous injection of hirudin in 14 cases. Of the 14 cases, 8 died. In 2 out of the 14 the preparation seemed to exercise no influence, but of the remainder the convulsions ceased immediately in 4 cases, after one further attack in 3, after two in 1, and after three or four in 1. (3) The author advocates the use of intrathecal injections of solutions of magnesium sulphate. Care in administration is needed, for too large a dose may lead to a fatal termination by causing paralysis of the respiratory center. A twenty-five per cent solution of magnesium sulphate should be employed after sterilization and the dose regulated by the body-weight of the individual patient, 1 cc. being allowed for every 25 pounds of body-weight. He reports two cases only, the first recovering after one injection, the second after two.

DONALD C. BALFOUR.

**Lichtenstein: Expectant Treatment of Eclampsia** (Die abwartende Eklampsiebehandlung). *Arch. f. Gynäk.*, 1912, xcvi, No. 3. By Surg., Gynec. & Obst.

The statistics of the author's 45 cases and of 193 collected cases from German institutions show excellent results. The author divides his cases into three groups:

1. Sixteen cases of intercurrent eclampsia in which delivery occurred at least 12 hours after the last attack.

2. Twenty-four cases in which delivery occurred within 12 hours after the last attack.

3. Five cases of puerperium eclampsia.

The bulk of the article deals with the clinical history of each of the 45 cases. Summary thereof: 34 primipara; 11 multipara.

Stage of pregnancy when the eclampsia began: Tenth month, 31 cases; ninth month, 5 cases; eighth month, 6 cases; second, sixth and seventh months, 1 case each; puerperium in 5 cases.

Nature of the delivery: spontaneous, 24; operated, 21 (of these 4 were mothers of twins).

Prodromal symptoms occurred as follows: Edema in 37 cases; headache in 27; optic disturbance in 4; vomiting in 11 cases, and 34 cases were unconscious when taken into the hospital. All 45 cases had albuminuria (highest 40 pro mille). Mortality of the children living at birth 37 (of which 8 died later). Dead at birth, 12. Of 36 viable children, 9 died.

Excluding the one case in which venesection was not made, we have of 44 cases, cessation of all symptoms and attacks in 26 cases, which is 59 per cent. The first venesection is the most important, about 500 cc. of blood being drawn. In only a few cases was a second or third blood-letting necessary.

The maternal death rate was 11.11 per cent; 5 women dying. Three of the deaths were due to other causes. Two severe cases of methæmoglobinæmia were cured by venesection and Stroganoff's narcosis.

In summing up his article, the author strongly advocates that the results from his cases have proven the worth of the expectant treatment by his method of venesection and Stroganoff's narcosis. He urges the removal of 500 cc. of blood at the first venesection. As the result of this procedure he claims that many deliveries occur spontaneously; that toxicity of the blood, as well as the blood, is decreased; the number of attacks is reduced; that in 60 per cent of the cases no attack occurs after treatment; that the mortality of the children is lower and that the maternal mortality is reduced to 11 per cent. He also urges that the urine be examined several times daily by the Esbach method.

Since the compilation of the statistics, the author had 35 additional cases of eclampsia without a death. This brings his cases to 80 with 5 deaths or 6.25 per cent. During 12 months he had 60 cases and no death.

L. W. SAUER.

**Schwarz: Mechanism and Treatment of Placenta Prævia.** *Am. J. Obst.*, N. Y., 1912, lxi, 974.

By Surg., Gynec. & Obst.

Schwarz believes that no form of placenta prævia as such ever offers a justifiable indication for Cæsarean section and that Braxton-Hicks version in the presence of a viable child should be discontinued because of the foetal mortality. He considers it the ideal treatment to tampon the cervix and vagina until a bag can be introduced, but advocates that the bag be introduced below the ovum instead of within the amniotic cavity.

N. S. HEANEY.



**Davis: Cæsarean Section: Technique of the Operation by the Small Median Incision Above the Umbilicus; with a Summary of Cases.** *Am. J. Obst., N. Y.*, 1912, lxi, Dec.

By Surg., Gynec. & Obst.

In this article Davis reports a new series of 60 cases with a maternal mortality of 4 or 5.79 per cent of cases. Among the 70 children resulting, 5 were stillborn and 3 died before leaving the hospital, or a mortality of 11.43 per cent. Two of the mothers died of eclampsia the day following operation, one died of infection who had placenta prævia centralis and a dead baby on admission, and one, who had a flattened pelvis and a 12-pound baby, died of infection. A forceps attempt had been made previous to admission; the baby was dead upon arrival at the hospital. Sterilization was done but rarely, twice in 147 cases. Twenty-six times the operation was performed upon patients who had had one or more sections (one had had 5) among these three mothers died and all the children survived. Davis advocates a small incision made above the umbilicus and a small parallel incision of the fundus through which the foetus has to be emptied without attempting to bring it outside the abdomen, and no attempt is made to remove either blood or amniotic fluid which has found its way into the abdomen. In one case a small rupture occurred of a previous section in the scar.

N. S. HEANEY.

**Peterson: The Indications for Abdominal Cæsarean Section.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

In Peterson's paper, he stated that the more common indications for this operation were obstructions to labor, pelvic contractions, fibromyomata, ovarian tumors, stenosis of the cervix and vagina, and miscellaneous, such as previous ventrofixations and the large size of the child. Other indications were uterine hæmorrhages, concealed accidental hæmorrhage, placenta prævia, constitutional crises, eclampsia, and contracted pelvis. Probably more Cæsarean sections would be performed for this indication than for any other. The operation was imperatively demanded in cases where the conjugata vera measured 7.5 cm. or less, and the child was living. When the child was dead and the true conjugate was 6.2 cm. or under, Cæsarean section was still indicated, on account of the danger to the mother of attempts to deliver the craniotomized child through such a small pelvic diameter.

He was at present engaged in tabulating the results of 425 cases of eclampsia treated by abdominal Cæsarean section, and some very interesting facts were being brought out. Not only had the literature been carefully searched and all recorded cases been collected, but many operators all over the world had been kind enough to furnish him with unpublished cases. Thus the statistics represented not the work of a few, but over 200 operators.

The total maternal mortality, counting patients operated upon before the aseptic era, was 36.9 per

cent, while this was reduced to 31.8 per cent if only the 317 patients operated upon since 1900 were counted. The 50 per cent mortality ascribed to abdominal Cæsarean section in the treatment of eclampsia could be explained by errors in the selection of cases, for many eclamptic patients were subjected to the operation who were hopelessly septic. These patients did not die from the eclampsia or the operation itself. Many of them perished because of the poor judgment on the part of the operators. They would have died even if the operations had not been performed for eclampsia.

In 245 cases of eclampsia, where there was no sepsis or very little chance of it prior to the abdominal Cæsarean section, the maternal mortality was only 24 per cent. It was significant that in 50 cases where operative procedures preceded the Cæsarean sections the maternal mortality was 48 per cent, the difference in mortality being due not to the eclampsia but to the sepsis accompanying the eclampsia, a condition which could be avoided once this relation of sepsis to Cæsarean section was fully realized by the profession.

The results of abdominal Cæsarean section for eclampsia, so far as the foetus was concerned, should be, and as a matter of fact were, gratifying in the 425 cases. In 217 cases since 1900, where the foetal statistics could be studied, the foetal mortality was only 5.5 per cent. Even this mortality was reduced to 3.7 per cent in 132 cases where the sections were performed after from one to five eclamptic convulsions.

These statistics were quoted to show that the last word had not been said regarding the place of abdominal Cæsarean section in eclampsia. At least, the statistics in over 400 cases had shown beyond a doubt that no one was justified in dismissing the treatment of eclampsia by abdominal Cæsarean section with a short statement that the mortality was so high as to make it an unjustifiable operation.

E. S. TALBOT, JR.

**Roberts: Cæsarean Section for Prolapse of Cord in Contracted Pelvis.** *Proc. Roy. Soc. M.*, 1912, vi, 56.

By Surg., Gynec. & Obst.

Patient was sent to the hospital with the cord hanging out of the vagina but pulsating. Examination showed that the head was not engaged and that the pelvis was contracted, the conjugate diagonalis being  $3\frac{3}{4}$  in. The cervix was only half dilated. After washing the cord with lysol an attempt was made to replace it with patient in the knee-chest position. As the pulsations were getting slower a Cæsarean section was performed. The child was saved and while the patient ran some temperature she made a good recovery.

President Routh suggested that the tardy and septic convalescence would probably have been averted if the Cæsarean section had been followed by subtotal hysterectomy. And that it was a question whether, even apart from pelvic contraction, it would not be justifiable to perform Cæsarean



in a "clean" case, if the cord was prolapsed, the child alive, and the genital passages undilated.

C. H. DAVIS.

**Ziegler: Acute Dilatation of the Stomach; Report of a Case Following Cæsarean Section.** *Am. J. Obst., N. Y., 1912, lxvi, Dec.*

By Surg., Gynec. & Obst.

Ziegler reports in detail a case of acute dilatation of the stomach occurring after Cæsarean section. The subject was a young negress with a generally contracted flat rachitic pelvis with a diagonal conjugate of 10 cm. who was submitted to section after 8 hours of labor during which there had been but one vaginal examination and that showed complete dilatation just before the section was performed. The patient had eaten a hearty breakfast at the beginning of labor. Ether was then given. Uterus was delivered before incising it. The operation was prolonged by severe asphyxia of the child. The patient immediately after operation seemed in good condition. Eight hours after the operation her pulse and temperature began to rise and distention of the abdomen appeared until 24 hours after, when the pulse was 140, temperature 103° F. Bronchitis also manifested itself. Shortly after this, large quantities of gas and foul fluid were expelled through a stomach tube. Aspiration of stomach was performed. Every 2 to 3 hours during the next 15 days and at longer intervals for another week saline and nutritives were administered freely by the bowel and the foot of the bed was elevated. Temperature and pulse returned to normal on the seventeenth day and patient eventually recovered.

N. S. HEANEY.

**Davis: Acute Dilatation of Stomach Following Cæsarean Section.** *Am. J. Obst., N. Y., 1912, lxvi, 925.*

By Surg., Gynec. & Obst.

Davis reports a death 30 minutes after Cæsarean section performed because of deformed pelvis. The patient had been in labor 6 or 8 hours, had an unskillful anæsthesia of changing ether and chloroform, and had had some pressure directed to the duodenal region by the foetal head, to which factors Davis attributes the occurrence of the dilatation, which became visible towards end of operation as a big, bulging, distended organ presenting in wound. Attempts to empty the stomach during operation by stomach tube were unsuccessful and the patient died within 30 minutes of closure of abdomen.

N. S. HEANEY.

**Bandler: Some Observations on Ectopic Gestation; with Report of Earliest Recorded Tubal Ovum.** *Am. J. Obst., N. Y., 1912, lxvi, Dec.*

By Surg., Gynec. & Obst.

Bandler urges in cases where the history is quite suggestive, yet the findings do not aid in the diagnosis of ectopic pregnancy, in view of the great risk the patient runs in case an ectopic pregnancy should be present and should rupture at a disadvantageous

time, and especially since many cases of ectopic pregnancy exist and come to rupture where previously there has been but some suggestive symptoms and no pelvic findings, that a colpotomy be made for diagnostic purposes. As a routine he prefers this to the long drawn out period of observation. Since often the diagnosis lies between incomplete abortion and ectopic pregnancy a gentle curettement may be performed, and in case this does not clarify the case it is but a slight affair to open the peritoneum vaginally. In case that an ectopic pregnancy is present the operation may then be completed vaginally or abdominally as the conditions indicate or the operator chooses. In Bandler's earliest tubal ovum he operated because of symptoms suggestive of ectopic pregnancy and found a hæmorrhagic ovary three times the normal size and a bluish but otherwise apparently normal tube. Thinking that he was probably dealing with an ovarian pregnancy, he at first removed the ovary and distal portion of the tube leaving behind the normal appearing isthmic portion of the tube. For better study of pathology he on second thought removed the remaining portion of the tube in which the pathologist later found a small nodule the size of a pea which proved to be the ectopic pregnancy, the ovary presenting but an altered corpus luteum. The tube at the seat of the wound measured 5.5 x 5 mm., while the ovum did not occupy the entire lumen, being but 3.75 x 3.5 x 2 mm. The ovum had not reached the stage of embryo formation. It was represented by several large masses and streaks of trophoderm which lay near the trophoblast. There was no true chorion formation. Leucocytes were limited to the loose muscular fibers at the base of the ovum and hence were probably not due to inflammatory reaction. A muscle septum separated that part of the lumen of the tube holding the ovum from the canal leading to the uterine cavity and was held by Bandler as the causative factor in the origin of the tubal implantation of the ovum.

N. S. HEANEY.

**Boquel: Extrauterine Pregnancy Operated in Labor at Full Term with Living Child** (Grossesse extra-utérine opérée à terme au cours du travail avec enfant vivant).

*Arch. mens. d'Obst. e. d. Gynec., 1912, i, 277.* By Journal de Chirurgie.

The patient was a woman of 26 years, who had complained of attacks of violent pain during pregnancy. The diagnosis at first was obscure, and appendicitis, tubal torsion, and a renal affection were considered, as well as ectopic gestation. A definite decision in favor of the latter was only arrived at in the seventh month, when the superficiality of the foetal part was decisive. The foetal mass was so closely connected with the uterus that it was indistinguishable from the latter and no certain conclusion could be arrived at as to whether the pregnancy was extrauterine or intramural. Intervention was postponed in order to allow the child to come closer to term. Symptoms of onset of labor finally forced interference. Laparotomy



was performed, the foetal sac opened and the child extracted. The tripartite placenta had a pelvic insertion and was adherent to the uterus. In place of marsupialization the author dissected out the placenta and membranes after preliminary ligation of the vessels in the broad ligament and of such omental vessels as appeared to supply the foetal sac. Certain of these latter anastomoses, however, were overlooked and their rupture led to a serious hæmorrhage. A rubber drainage tube was put in place and the wound closed. The patient suffered at first from the loss of blood, but slowly recovered. In the course of convalescence a small sponge was passed at the point of drainage. The child at first showed derangement of nutrition but later developed normally.

The author calls attention to certain points in this case: The difficulty of diagnosis between tubal and mural pregnancy was due to the fact that the foetal cyst was closely adherent to the uterus and that the placenta was attached to this organ, whence arose the impossibility of distinguishing between them by clinical methods of examination. There was no deciduum passed off from the uterus.

In dissecting off the placenta and membranes the two chief sources of hæmorrhage are the vessels of the broad ligaments on the corresponding side and the omental anastomoses. Boquel claims that the breaking up of the adhesions with neighboring abdominal viscera, such as the intestine, colon, or even the uterus, never gives rise to hæmorrhage unless these viscera are injured. In spite of the danger from hæmorrhage, he prefers dissection of the sac to simple marsupialization, because the latter leads to indefinite suppuration and often to herniation.

The author's conclusions concerning the treatment of such cases are as follows:

"In the case of pregnancy which has arrived close to term, I would propose to intervene in the following manner without awaiting for symptoms of false labor:

"First, a median incision should be made which should, as far as possible, avoid the placenta; second, the sac should then be opened and the child extracted without tension on the cord or on the sac; third, the relations of the sac should be determined and if the case appears favorable, notably if the placenta is inserted toward the pelvic portion, marsupialization should be abandoned in favor of the following procedure:

"In the first place, the preliminary hæmostasis should be made as complete as possible by finding and clamping off the uterine and the utero-ovarian pedicles, as well as all visible omental anastomoses, care being taken to avoid laceration of or tension on the sac. In the second place, the placenta must first be quickly and completely dissected off without hesitation, after which, as in artificial delivery, the membranes should be slowly drawn out, constantly watching to see if they contain any vessels which run into the placenta tissue. If these are

present they should be clamped. In the third place, the dissection and extraction of the membrane should be completed wherever possible by the use of the fingers rather than with instruments. In the fourth place, a simple strip gauze drain should be used rather than a Mikulicz. The utility of the former may be questioned, but if left in place for forty-eight hours it may constitute a real safeguard and has no great inconveniences.

"I have already spoken of the easy expulsion of a sponge which had been overlooked during the course of the operation. One should never be supplied with a large number of small sponges, but with a few large ones, the boxes for these being kept separate. A moment of excitement sometimes leads to this error, especially when the equipment at one's disposal is rudimentary and sufficient illumination is lacking."

L. CHEVRIER.

**Andrews: A Case of Simultaneous Intrauterine and Extrauterine Pregnancy, with Probable "Internal Wandering" of the Ovum.** *Proc. Roy. Soc. M.*, 1912, vi, 52. By Surg., Gynec. & Obst.

Patient, aged 29, married five years; two children, the younger two and a half years old; last period July 9; began to have pain September 17, and September 19 lost a large amount of blood per vaginam and passed a small embryo, seen by the nurse but not by the doctor. When she entered the hospital September 20 she was blanched and evidently in severe pain: pulse 130 per minute. The cervix was dilated and the greater part of an ovum of about two months removed with placenta forceps. The abdomen was opened and found to contain a large amount of blood. The left tube and ovary were normal but on the right side no ovary or tube could be found. At the right cornu of the uterus was a rupture making a rough surface the size of a shilling, attached to which was a blood clot containing a small embryo. This case is of interest because of coexisting intrauterine and extrauterine pregnancy; the extrauterine being interstitial, and in the absence of the right tube and ovary.

Cases with internal wandering of the ovum are rare. Wyder in 1886 recorded a case and quotes other cases recorded by Schultse and Hassfurter in 1863.

C. H. DAVIS.

**Cobb: The Management of the Grave Emergency Cases of Extrauterine Pregnancy.** *Ann. Surg.*, Phila., 1912, lvi, 835. By Surg., Gynec. & Obst.

This paper is based on a careful study of 137 cases of tubal and interstitial pregnancy at the Massachusetts General Hospital from 1902 to 1910. The object of the study was to obtain information in regard to the wisdom of immediate operation in the desperate cases of rupture with severe hæmorrhage. It is regarded as important to contradict the teachings of certain prominent gynecologists in this country who have advised the dangerous method of delay in these cases.

The cases have been divided into two broad



classes: 1. The grave emergencies, with sudden symptoms followed by alarming hæmorrhage, which cases need operative treatment at once — it is this class to which the writer has paid special attention, the number of which is 36. 2. The non-emergencies, with less alarming symptoms and signs of varying degree and kind. This second class can be further subdivided into: (a) partial ruptures with recurring progressive and slight hæmorrhages; (b) tubal abortions; (c) cases of unruptured tubal pregnancy.

A study of all the cases justifies the following conclusions:

1. More than 33 per cent of extrauterine pregnancies occur in young women who have never before been pregnant.

2. Salpingitis, or pelvic infection, is not an essential or frequent causative factor.

3. Most of the cases of complete rupture with alarming hæmorrhage occur in the early weeks, often in the first month; these are the cases that are rapidly fatal unless operated on. Cases that have gone two months or more are those that furnish the greatest number of non-emergency cases.

4. Cases of sudden, severe rupture, until signs of marked intra-abdominal hæmorrhage are present, often simulate other grave abdominal emergencies, with abdominal tenderness and spasm, high white blood count, fever, and vomiting.

5. In grave emergencies, with signs of extreme hæmorrhage, operation should be done at once, without waiting for a possible reaction.

6. In the less severe cases of tubal rupture, without signs of marked hæmorrhage, a correct diagnosis is often difficult or impossible.

7. The menstrual history cannot be depended upon; many of the most alarming cases had skipped no period.

8. The character and location of the pain may vary within wide limits.

9. Tubal abortions are nearly as frequent as tubal ruptures. Cases of tubal abortion seldom give a history of skipping a menstrual period, but after a history of continued slight flowing or dribbling since the period.

A detailed analysis of the cases is made, furnishing interesting statistics: 36 were cases of desperate emergency — the left tube was involved in 18 cases, the right tube in 15; 17 cases ruptured early — from three to six weeks; 7 cases under four weeks; 6 between the sixth and eighth weeks. Temperature was normal in but two cases. In 15 cases it was over 100° F. The highest was 102.5° F. The leucocyte count was very high in the majority of cases, from 20,000 to 45,000; in one case 9500. In 16 cases the onset was sudden, with no warning symptoms. In 17 cases some warning signs preceded for from one to ten days. In 7 cases there was general abdominal pain from 8 to 36 hours before the acute onset. Hæmoglobin estimation varied from 35 per cent to 70 per cent. In only 13 cases could a mass be felt by vaginal examination. Vaginal bleeding at the onset occurred in only 7 cases. In 10 cases active

arterial hæmorrhage was going on at the time of the operation. Twenty-eight cases recovered; 5 died. Of these latter, two failed to survive the operation, one died of continued hæmorrhage where no ligatures were used, one died of septic peritonitis a week after, and one of pneumonia on the eighteenth day.

In arguing for immediate operation one must take pains to consider only the really desperate cases, and in considering the mortality and estimating the percentages only the deaths due to the operation itself should be taken into consideration; late deaths from peritonitis, pneumonia, etc., must be thrown out.

With this in mind the following statements are made:

1. Immediate operation is the method of choice.

2. Delay, even for transfusion, is dangerous and fatal, and especially delay with stimulation.

3. With proper technique and the use of intravenous salt solution, the percentage of deaths directly due to operation will be very low.

4. In a very small percentage of cases direct transfusion will be needed and will save the small number of cases that would be fatal otherwise.

5. Direct transfusion should be done after operation, not before.

6. At present, with the availability of infusion and direct transfusion, it is criminal for any operator of reasonable skill to delay. CAREY CULBERTSON.

#### LABOR AND ITS COMPLICATIONS

**Stookes: Spontaneous Rupture of the Uterus and Pulmonary Embolism.** *J. Obst. & Gynec. Brit. Emp.*, 1912, xxii, 356. By Surg., Gynec. & Obst.

The patient in this case was a woman of 30 years who had had seven previous labors. Her first four labors and the seventh were normal. The fifth was instrumental and at the sixth there was some trouble with the placenta. The eighth pregnancy went to term and a midwife attended her in labor. While vomiting a sudden and severe pain was felt in the abdomen. A doctor was called, who could make out no presenting part, the cervix admitting but one finger. Vomiting and pain continued and five ounces of castor oil and two enemata were given in 24 hours. Next day her general condition was bad and she was transferred to the Liverpool Maternity Hospital where abdominal section was performed. Beneath the peritoneum was found a thin layer of blood and the bag of membranes. This was intact and contained a dead child weighing 6 lbs. 13 oz. The uterus was firmly contracted in the pelvis, having expelled the complete unruptured gestation sac into the peritoneal cavity. There was a ragged tear on the posterior uterine surface extending obliquely from about the right tube down nearly to the cervix in the middle line. The placental site was on the anterior uterine wall. The uterus was swabbed out and sutured. The abdomen was closed with rubber tube drainage. Convalescence was going along well when, on the sixteenth



day, pain in the left chest and dyspnoea suddenly occurred, with increased pulse and respiration. Very little air was entering the lower lobe of the left lung. This persisted for three days, after which she improved and was discharged one month after entering the hospital.

CAREY CULBERTSON.

**Rongy: Indications for Pubiotomy.** *Internat. J. Surg.*, 1912, xxv, 377. By Surg., Gynec. & Obst.

The author is impressed with the development of a relative standardization of method in obstetric surgery during the past decade. Not only the pelvis but the foetal head plays an important rôle in normal labor and in operative delivery. A given pelvis may permit the passage of a small foetal head during one labor while a larger head in a subsequent pregnancy will bring about a labor complication. In slightly or moderately contracted pelvis induction of labor in the thirty-sixth week of pregnancy is not safe for the mother, with a foetal mortality practically nil. Craniotomy should be eliminated as a procedure on the living child where the mother's condition is good. In the light of present knowledge high forceps is hardly a justifiable operation. Not only must the lives of mother and child be saved but the maternal morbidity must be lessened. In modern work we must consider the effect of the operation upon the mother, the effect upon the child, and thirdly, the operation from a purely technical and surgical standpoint. Hence high forceps does not appeal to Rongy as being technically good surgery. For these reasons abdominal Cæsarean section is an ideal operation if performed early. But after other efforts at extraction such a method is contraindicated and pubiotomy is only to be considered. Pubiotomy is the only operation in border-line cases that have been mismanaged or misjudged. Rongy reports six cases of extramedian section performed after the technique of Döderlein in general, extracting with the forceps, episiotomy being employed in primiparae.

In conclusion Rongy states that while his results from this operation were quite favorable, he still feels that it must be performed in cases where there is no other alternative. It must also be performed very carefully, and if one is not trained in gynecological surgery it should not be undertaken. The injuries to the soft parts and to the bladder and urethra may be quite extensive. The sacro-iliac joint may be injured, and if this possibility is not borne in mind, this will result in permanent disability. Hæmorrhage may be profuse and at times uncontrollable. Communicating vaginal tears take place in a moderate number of cases. Pubiotomy should never be the operation of choice; it is always one of emergency. In cases that have been misjudged and neglected, with the child still viable, it is the only method of procedure, but only an experienced obstetrician should undertake its performance.

Under these circumstances, pubiotomy has a definite field, and does not compete with either Cæsarean

section or high forceps delivery. In cases where Cæsarean section is indicated, pubiotomy is contra-indicated, and vice versa.

CAREY CULBERTSON.

**Davis: Control of Post-Partum Hæmorrhage by Means of Manual Compression of the Aorta. Cæsarean Section in Placenta Prævia.** *Surg., Gynec. & Obst.*, 1912, xv, 662.

By Surg., Gynec. & Obst.

Momburg's method of compressing the aorta, in cases of hæmorrhage from pelvic vessels, directed attention towards compression of the abdominal aorta in the treatment of acute and serious hæmorrhages. This method has proven useful in cases of ruptured ectopic pregnancy, placenta prævia, premature separation of the normally located placenta, and rupture of the uterus. This procedure is of value in some cases of post-partum hæmorrhage. In critical cases, a direct compression of the aorta by a hand in the uterus not only stops bleeding, but gives the obstetrician an opportunity to treat the local focus. For example:

A multipara in the seventh or eighth month of pregnancy was brought to the Jefferson Hospital in an extremely anæmic condition, the result of an uterine hæmorrhage. The placenta had separated prematurely. Examination excluded placenta prævia. As she was being prepared for dilatation of the os, she suddenly collapsed. After being transferred to the operating table, the cervix was quickly dilated, a hand was introduced into the uterus and the knuckles of the fist were pressed against the aorta near its bifurcation. An assistant gave intravenous infusions of physiological salt solution and strychnin, ergot, atropin and digitalin subcutaneously. Then the uterus was washed out with a hot antiseptic solution and when the patient had regained consciousness, the uterus was tamponed with 10 per cent iodoform gauze. The patient recovered.

The most recent literature on placenta prævia centralis shows how successful the Cæsarean operation is in such cases. The author suggests that placenta prævia centralis be considered an ectopic pregnancy, in that "ectopic" merely signifies attachment of the ovum in an atypical place. The Cæsarean section decreases the hæmorrhage, lessens the danger of infection, and is justified in cases of placenta prævia where mother and child are in comparatively good condition and no danger of infection from previous tampons is likely.

Of seven such cases operated on by the author, all recovered; three living children were delivered. The Porro operation was performed where a suspicion of infection existed. In the other cases the classical Cæsarean section was performed, followed by lavage of the uterine cavity with physiological salt solution and subsequent packing with 10 per cent iodoform gauze.

Many authorities agree that the vagina should not be packed with gauze in cases of placenta prævia centralis. The author cites a case that ended fatally.



A multipara was brought to the clinic after having lost much blood at her home where an attending physician had tamponed the vagina. At the hospital a Cæsarean section was made and the child saved. The woman died six days after the operation. At autopsy, a generalized peritonitis was found, but uterus, appendix, gall-bladder, etc., were intact, the wound in the uterus being normal in appearance. Streptococci, staphylococci, and coli communis were found in the exudate of the peritoneal cavity. The uterine cavity was sterile. The portal of entry must have been the cervix, which was distended by the tampon of the vagina.

L. W. SAUER.

### PUERPERIUM AND ITS COMPLICATIONS

**Wallace: Puerperal Pelvic Thrombosis; Ligature of Left Common Iliac Vein.** *J. Obst. & Gynec. Brit. Emp.*, 1912, xxii, 351. By Surg., Gynec. & Obst.

Wallace here reports the case of a woman aged 25 who developed rigors and pyrexia on the sixth day after her third parturition. Thrombosed veins were palpable along the line taken by the left uterine and left obturator veins. She appeared desperately ill, temperature reaching 106° F., pulse 160. Exploratory laparotomy was performed on the 23d day. A tortuous vein in the left broad ligament was found to be thrombosed as far out as the infundibulo-pelvic ligament. The left internal iliac vein was thrombosed up to its junction with the external iliac. The anterior branch of the internal iliac was also thrombosed and could be traced forward and inward toward the uterus. Induration could be traced along the left obturator vessels. The surrounding tissues were moist and did not yield readily to blunt dissection. Therefore, it was decided not to attempt removal of the thrombosed veins but instead to ligate the left common iliac vein. This was done. For three days following there were no more rigors and the patient felt better. Pyrexia, however, continued and after the fourth day rigors again occurred, the patient ultimately dying from exhaustion. This case is interesting in that it shows the extreme difficulty in dissecting out veins in well-marked puerperal thrombosis and as an illustration of the futility of closing up one set of exits from the thrombosed area. CAREY CULBERTSON.

**Walton and Medalia: Hæmolytic Streptococcus and Puerperal Septicæmia.** *Surg., Gynec. & Obst.*, 1912, xv, 682. By Surg., Gynec. & Obst.

We have studied 103 labor cases, ante- and post-partum, with special reference to the finding of hæmolytic streptococci in the parturient canal by means of the blood-agar method (Schottmüller), and to determine upon the relation of hæmolysis as

an index to virulence; also with reference to the autogenous or exogenous source of infection, and the value of a routine bacteriological examination post-partum for purposes of detecting "healthy" and "unsuspected" carriers of puerperal sepsis.

In the 103 cases examined we obtained the following results: *Ante-partum.* Before any digital examination was made we found hæmolytic streptococcus in 1 case, 1 per cent; non-hæmolytic streptococcus in 21 cases, 20.91 per cent. (As to location, vagina or cervix, see article.) *Post-partum.* We found hæmolytic streptococcus in 9 cases, 8.73 per cent; non-hæmolytic streptococcus in 17 cases, 16.5 per cent. Out of the 9 cases with hæmolytic streptococcus post-partum only 2 had morbid temperature and 2 mildly febrile temperature. Of the 17 cases with non-hæmolytic streptococci post-partum 5 were found with a morbid temperature and 4 with mildly febrile temperature. (Bacteria other than streptococci (staphylo, pneumo, b. coli, pseudo K. L., etc.) were found in 76 (73.80 per cent) of the 103 cases ante- as well as post-partum. Four of the 76 were morbid and four were mildly febrile post-partum, while there were only 5 cases found sterile ante-partum and only one case post-partum.)

From the observations just cited we have to recognize the presence of a hæmolytic and non-hæmolytic type of a streptococcus, and further, that the hæmolytic streptococci are not always virulent, nor are the non-hæmolytic streptococci always avirulent. The presence of streptococci of either type must therefore be looked upon as capable of causing sepsis. Clinically, however, the finding of a hæmolytic streptococcus would indicate greater severity.

Our finding of hæmolytic streptococci in 5 afebrile and 2 mildly febrile, also non-hæmolytic streptococci in 4 mildly febrile and 8 afebrile cases, all of which may be considered as possible carriers of infection, would have been overlooked without the routine bacteriological examination. The finding of streptococci ante-partum in the 2 cases with morbid temperature post-partum, due to hæmolytic streptococci, also the 2 morbid cases due to non-hæmolytic streptococci in whom we found the same organism ante-partum would indicate that autogenous or endogenous infection of puerperal sepsis is of equal importance with exogenous infection as to frequency, but not as to severity of this disease. The routine bacteriological examination of maternity cases would seem, according to our findings, to be of great practical value from the standpoint of prophylaxis in detecting "healthy" and "unsuspected" carriers of infection; and finally, extragenital infections with faulty personal hygiene on the part of the patient would tend to increase the possibility of autoinfection as a source of puerperal septicæmia.



## GENITO-URINARY SURGERY

### KIDNEY AND URETER

**Rövsing: "The Diagnosis of Tuberculosis of the Kidney in Very Early and Very Advanced Cases." *J. Am. M. Ass.*, 1912, lix, 2228.**

By Surg., Gynec. & Obst.

Rövsing says he has found that albumin may be absent in the urine in surgical tuberculosis of the kidney. In all cases of albuminuria, pyuria or cystitis, a chemical, bacteriologic and microscopic examination should be made. He has shown tubercle bacilli in 80.7 per cent of about 200 cases — allowing a twenty-four hour urine to precipitate and examining the precipitate. Pus in the urine without bacteria practically assures the presence of tuberculosis. He recalls his report of toxic albuminuria in which, in spite of albuminuria from the other kidney, he extirpated the tuberculous kidney, with a disappearance of the albuminuria. He has given up complicated methods of testing kidney function in favor of the quantitative urea analysis, with Esbach's ureometer.

By nephrectomy 75 per cent of all patients operated on can be saved, hence nephrectomy is indicated as soon as the diagnosis of unilateral tuberculosis is made. He discusses the prognosis and treatment of kidney tuberculosis and strongly favors the use of phenol in bladder tuberculosis.

L. G. DWAN.

**Robins: Suppurative Pylephlebitis. *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.**

By Surg., Gynec. & Obst.

A case of suppurative pylephlebitis which occurred in his practice in 1911 was related in detail by Robins. In this case Van Cott's vaccines were used; in all, 28 doses were given. It seemed to him that these vaccines caused improvement for a time; but finally the patient's abdomen was opened in two places, and it was found that the fluid had become purulent. The patient gradually declined, and died after an illness of 150 days.

In view of the fact that this malady was usually rapidly fatal and that no plan of treatment had yet effected a cure, he thought treatment along this line by vaccines offered the only hope, and the apparent success of these vaccines at one time in this case was encouraging.

E. S. TALBOT, JR.

**Mason: Acute Hæmatogenous Infection of the Kidney. *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.**

By Surg., Gynec. & Obst.

In this paper Mason reported three cases and summarized them as follows:—

(1) Acute hæmatogenous infection or septic infarct of the kidneys is of comparatively frequent

occurrence, and is often overlooked. (2) Serious injury to or disease of one kidney acts as a predisposing cause. (3) While nephrectomy is demanded in the fulminating type, early diagnosis and operation will permit of decapsulation with incision and drainage of infarcts in certain of the milder cases, thereby saving some kidneys which would require removal if treated later. (4) The relation of movable kidney to the development of septic infarct offers an indication for nephropexy worthy of consideration. (5) When exploration in acute supposedly abdominal conditions fails to reveal lesions sufficient to account for the symptom present, the possibility of septic renal infarct should be borne in mind and the condition of the kidney ascertained before completing the operation.

E. S. TALBOT, JR.

**Cunningham: Acute Unilateral Hæmatogenous Infections of the Kidney. *Ann. Surg.*, Phila., 1912, lvi, 818.**

By Surg., Gynec. & Obst.

The author points out that acute unilateral inflammation of the kidney is a condition which is frequently mistaken for other acute inflammatory diseases within the abdomen, especially appendicitis and gall-bladder disease. The disease starts in the kidney by the lodging of from one to a few micro-organisms, the usual organisms being the pyogenic cocci and the colon bacillus.

The pathological process produced is of two types, first, multiple miliary abscess formation, second, a diffuse inflammatory process without suppuration. The former type clinically produces a rapid toxæmia, the picture is that of severe sepsis, temperature 102-105°, high leucocytosis, all appearing within 24 to 48 hours after the onset, which is usually characterized by a chill and vomiting. Pain on the side of the affected organ, abdominal tenderness, muscular rigidity and spasm is found on the affected side. The abdominal signs are similar to those occurring in acute infection of the appendix and gall-bladder, for which the disease under consideration is often, if not usually, mistaken. The pathognomonic signs are lumbar tenderness, rigidity and tenderness on the affected side.

The urine in this condition is usually quite normal in its gross appearance, contains but little albumin, and microscopically there is but a small amount of pus and blood cells. The treatment of this form of the disease is nephrectomy.

The diffuse inflammatory process in the kidney, without abscess formation, is characterized by an inflammatory exudate, spreading through the kidney, resulting in focal abscesses and a solution of tissue. This type of the disease presents a pathol-



ogy more commonly the result of an ascending infection, but is encountered as a process of hæmatogenous origin and results from an infection of the organ, not by the pyogenic cocci, as does the abscess type, but by the colon bacillus.

The clinical course of this form of the disease differs in severity from that of the abscess type, because of the lesser virulence of the infecting organism. The onset may be sudden, as in the former type, the temperature rising rapidly to 102° or more, and the leucocytosis is often high.

The abdominal symptoms are less pronounced, but tenderness over the kidney in the costo-vertebral angle with some muscular rigidity are constant signs. The chief feature differentiating this form of the disease from that of abscess formation is the lack of progressive toxæmia and the presence of more abnormal elements in the urine.

In this form of the disease it is felt that palliation, forcing fluids, and the employment of urinary antiseptics, fortifying the patient's strength by a nutritious diet and stimulating drugs, should be instituted at the onset. Operative interference should only be undertaken when the symptoms and physical signs give evidence of progression to the point of lowering the general resistance by toxic absorption. Favorable results have been obtained by palliative treatment decapsulation, and by splitting and draining the kidney.

The author gives a detailed account of 8 patients of those two classes of kidney infection upon which he has operated, and mentions the cases recorded by other writers.

**Cordier and Mazel: Acute Intoxication from Bichloride of Mercury** (Intoxication aiguë par le sublimé). *Lyon méd.*, 1912, cxix, 1023.

By Journal de Chirurgie.

Cordier and Mazel report a case of a young girl, 19 years old, who attempted to commit suicide by drinking a solution of 2½ to 3 grains of bichloride of mercury. Severe vomiting, accompanied by a profuse diarrhœa and abdominal pain was followed by the syndrome of mercurial nephritis. Suppression of urine was extreme. The urine voided gave a heavy albuminous precipitate and was filled with all varieties of casts. Uræmia soon intervened.

Medical treatment failed and on the fourth day of the intoxication a double decapsulation and nephrotomy, according to Leriche's method, was performed. The following morning the patient urinated 80 cc. of clear urine, which contained only a trace of urea. On the second day after the operation she did not urinate, but the dressing was saturated with a liquid of a urinous odor. The patient died on the fourth day after the operation, which was the eighth day of the intoxication.

Relative to this case, Mazel reports the case of a young man 30 years of age, who had taken about two grains of bichloride of mercury. The stomach was washed out one hour later, and the patient was made to gargle. Immediately following this he complained

of excruciating epigastric burning and was extremely salivated. The following day he urinated 300 cc. of urine and had diarrhœa. On the next day, he eliminated 200 cc. of a very albuminous urine which contained many casts. On the fourth day of the intoxication, complete anuria occurred. A double decapsulation was performed on the second day following this. On the same day 30 cc. of urine were obtained by catheterization and five hours later the patient passed spontaneously 25 cc. Sudden death occurred during the night.

At autopsy, the kidney showed acute parenchymatous nephritis; congestive subperitoneal ecchymosis of the last 40 cc. of the large intestine, and hepatization of the right upper lobe and an œdematous congestion of the left lobe.

Nove, Gosserand and Gremien studied the lesions of mercurial nephritis from sections taken from the first case reported above and from the post-mortem specimen taken from the second case. These lesions show similar characteristics, although they were more pronounced in the second case. In the post-mortem specimen, the epithelial desquamation was very advanced; the glomeruli were generally intact; and there was desquamation of the supranuclear part of the epithelium of the convoluted tubules. The epithelial débris plugging the tubes accounted for the anuria.

It would appear from the above that nephrotomy would permit the evacuation of the tubular plugs and the regeneration of the epithelium, but this operation must be performed early. The authors after experiments upon 19 rabbits and guinea pigs arrive at inverse conclusions:

They demonstrated in these experiments that nephritis results from the injection of bichloride of mercury. Following the occurrence of this they performed nephrotomies, or decapsulations. The urines were collected and analyzed every 24 hours and histological examinations were made. In nearly all of these cases they demonstrated lesions of the liver and of the intestinal tract and in short, that death resulted from a general intoxication. When the intoxication was severe the animals died in spite of double decapsulation or unilateral nephrotomy (the rabbit does not bear double nephrotomy). In the severe forms, the results are very doubtful. Thus, experimentally the surgical treatment of mercurial nephritis is not satisfactory.

R. LERICHE.

**Wilson: The Embryogenetic Relationships of Tumors of the Kidney, Suprarenal and Testicle.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.  
By Surg., Gynec. & Obst.

The basis of Wilson's paper consisted of a study of the pathological specimens obtained at operation and autopsy in the Mayo clinic and a study of the human and comparative embryology of the urogenital system. The results of his observations were as follows:

**Renal tumors.** (1) Of 92 tumors studied, there



were 3 pelvic papillomata, 4 carcinomata, 1 squamous-cell epithelioma, 1 adenoma, 1 fibroma, 7 sarcomata, 1 Wolffian tumor, 3 embryomata (Wilms's tumors), and 71 mesotheliomata. (2) The renal pelvic papillomata and carcinomata apparently arose secondarily to chronic irritative processes of the adult pelvic epithelium. (3) The rare squamous-cell epithelioma probably was a neoplastic development from the embryonic inclusion within the renal pelvis of ectoderm which had found its way into the lower end of the primitive excretory duct by way of the cloaca. (4) The embryomata of the renal cortex, composed of renal and other tissues, and occurring in young children were, according to Wilms, derived from inclusions of the lateral embryonic plate within the caudal portion of the nephrogenic cord in the early embryo. (5) The most numerous tumors of the renal cortex, the so-called hypernephromata or Grawitzian tumors, were apparently mesotheliomata derived from nephrogenic vesicles which had failed in the early embryo to form a tubular connection with the renal pelvis. (6) Most of the few true sarcomata of the kidney developed primarily in adult tissue of the renal capsule and involved the cortex secondarily. (7) The renal cortex was also frequently the site of inclusions from the mesonephros and rarely of inclusions from the suprarenal gland. Rarely, if ever, did either of these inclusions in the renal cortex form malignant tumors.

**Adrenal tumors.** (8) Of the 3 primary tumors of the adrenal studied, 1 was an adenoma and the other 2 hypernephromata arising from the adrenal cortex. (9) Primary malignant tumors of the adrenal were either round-cell sarcomata or more frequently hypernephromata arising from the adrenal cortex. (10) Adrenal hypernephromata frequently induced abnormalities of sex and strength. (11) Tumors of the adrenal, in whatever stage of their development, bore no histological resemblance to most mesotheliomata (so-called renal hypernephromata).

**Testicular tumors.** (12) Of the 21 tumors of the testicle, all of the 10 which it was possible to study in histological detail were teratomata. (13) So far as could be determined, the history and histology of these 19 cases were in harmony with Ewing's hypothesis that teratomata of the testicle arose from sex cells whose normal development had been suppressed. (14) The difference in time of development of the embryonic crop of genitoid cells and the next generation, which appeared at puberty, might account for variations in structure and tempo of the testicular teratomata.

E. S. TALBOT, JR.

**Nicolich: Hydatid Cysts of the Kidney Opening into the Intestines; Nephrotomy; Recovery** (Kyste hydatique du rein ouvert dans l'intestin; nephrotomie; guérison). *J. d'Urol.*, 1912, ii, 842.

By Journal de Chirurgie.

Nicolich reports a case of hydatid cysts of the kidney in a woman who five years before had re-

covered from a hydatid cyst of the right lung which had ruptured into a bronchus. The patient was 39 years of age. At the age of sixteen she had noticed a mobile tumor in the right side of the abdomen which had gradually increased in size and had become painful. Seventeen years later pulmonary symptoms had developed which had terminated with the expulsion of a number of hydatid cysts. In the meantime, the abdominal tumor had continued to grow and hydatids were frequently found in the urine. This tumor lay just beneath the liver, and extended as low as the iliac region. It was almost spherical. Cystoscopy showed pus, draining from the right ureteral orifice. Ureteral catheterization on the left side yielded clear urine. In the meantime, the patient had an attack of diarrhoea in which several successive stools contained hydatids. Nephrotomy was carried out under spinal anaesthesia. The lower pole of the kidney was enlarged and contained a cavity full of pus, but without any trace of hydatids. A few days later, however, fragments of germinal membrane were cast off through the drainage tube. Healing resulted without fistula formation. Similar cases are rare. Crauwel, in 64 cases of pulmonary hydatid cysts, reports only three in which spontaneous healing followed rupture of the cyst into a bronchus and no case of hydatid cyst of the kidney opening into the intestines.

J. TANTON.

**Stone: Hypernephroma of the Kidney.** *Surg., Gynec. & Obst.*, 1912, xv, 665.

By Surg., Gynec. & Obst.

The difference between hypernephromata and carcinomata and sarcomata is pointed out, the author giving Keen's definition of the former as "tumors arising from adrenal tissue," whether in the normally situated gland or in ectopic fragments known as "rests." The possibility of the location of these rests in other portions of the body has opened up a wide field for research. Hypernephromata are rare as compared with other malignant growths but are the most frequent of all malignant tumors of the kidney and are relatively increasing.

The characteristic symptoms are: pain, often at some distance; marked anaemia; manifestations of a slight infection with a moderate leucocytosis; exceptionally red cells are present in the urine, and rarely a tumor mass is palpable. Metastases are common and most frequent in the lungs, liver, bones or line of incision.

Three cases are reported. In the first the patient lived over 6 years after operation, finally dying of malaria. The second case had a recurrence in the scar in less than a year which resulted fatally within a year. The third had symptoms referable to the digestive organs for three years, with pain below the left kidney. At operation the colon was found adherent to the kidney, which was removed. The patient has remained well for a year.

E. K. ARMSTRONG.



**Payne and Macnider: A Study of Unilateral Hæmaturia of the So-Called Essential Type.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

Payne and Macnider reviewed the literature on this subject and reported five cases of unilateral hæmaturia of the so-called idiopathic type, which were relieved of all symptoms by nephrotomy. The authors were inclined to believe that in the majority of these cases of unilateral hæmaturia the condition was one of chronic inflammation of one type or another, and detailed a series of experiments which apparently excluded as a causative factor certain developing vascular changes. These experiments would, therefore, apparently contravene Klemperer's theory of angioneurotic oedema, and also Albarran's idea of a slight lesion of nephritis being a sufficient cause of the unilateral hæmaturia.

E. S. TALBOT, JR.

**Baldwin and Baldwin: Surgery of the Kidney, Based on Case Records of Ten Years.** *Am. J. Urol.*, 1912, viii, No. 12. By Surg., Gynec. & Obst.

This report, based on the case records of J. F. and Hugh A. Baldwin, years 1902 to 1912, embraces sixty-seven nephrectomies; 75 per cent of these cases survived the operation; eleven of the fifty survivors have died since, only one however by reason of failure of the other kidney. Four of the women of this series, together with two of a preceding period, have given birth to children. Tuberculosis was the cause of thirty-four of the nephrectomies, with a primary mortality of 20 per cent. Only six of the survivors have died since. A study of these cases shows that a nephrectomy with complete recovery does not greatly shorten the expectancy of life.

Anchoring of the kidney was done sixty-one times. Reports received from fifty-four of these indicated complete success in forty-five, great improvement in four, complete failure in five. The Baldwin technique was used, two flaps of the kidney capsule being sewed to a column of muscle derived usually from the edge of the quadratus lumborum.

The mortality figures for nephrotomy must always be high, as it is at best a makeshift operation done because the serious condition precludes a more complete operation.

Decapsulation for chronic nephritis, in the only case where it was given a fair trial, proved a brilliant success; in four other last-resort cases it failed to do any permanent good although it did not hurry the demise. A double decapsulation can be done in less than fifteen minutes. Decapsulation of the remaining kidney is suggested after nephrectomy, when the urinary suppression is due to acute congestion. The possibilities of kidney surgery are great; and the amount of kidney substance necessary to life is small.

**Fairchild: Decapsulation of the Kidney.** *J. Am. M. Ass.*, 1912, lix, 2234. By Surg., Gynec. & Obst.

Fairchild has collected all available reports in the French, German, Italian, English and American

literature attempting to arrive at conclusions as to what cases should or should not be decapsulated. He found reports of ninety-two cases with definite results from forty-four different operators. Sixty-two patients recovered; thirty died, giving a mortality of about 33 per cent. About 30.8 per cent of the cases of eclampsia, under any treatment, end fatally. He could discover no good results from decapsulation in any case in which the kidney had undergone degenerative changes. The results were good in inflammatory cases in which the degenerative changes had not gone too far. L. G. DWAN.

**Siter: Results of Experiments on Kidneys with Especial Reference to Decapsulation and Establishment of Collateral Circulation.** *Surg., Gynec. & Obst.*, 1912, xv, 702.

By Surg., Gynec. & Obst.

As the result of animal experimentation, attention is directed to the possibility of forming new capsule in the kidney after the old capsule has been removed, and the forming of collateral circulation by substituting the omentum for the old capsule.

The following facts have been proven:

That the kidney increased in size upon decapsulation.

That wrapping the decapsulated kidney in the omentum is immediately successful in forming a new capsule.

That collateral circulation is established at the end of ten days.

That collateral circulation is sufficient to allow the kidney to functionate properly when the renal blood-vessels are tied off.

That the kidney remains much enlarged when the capsule is removed.

That forming a new capsule from the omentum prevents adhesions between the kidney and the surrounding soft parts and increases the blood supply.

**Mayo: The Surgery of the Single and Horseshoe Kidney.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.

By Surg., Gynec. & Obst.

In this paper, Charles H. Mayo stated that developmental abnormalities of the genito-urinary system were very frequent. Of this group, irregularities of the circulation of the kidney were the most common. Their own autopsy records had shown in a single year as high as 4 per cent of cases presenting gross anomalies of the kidney and ureter of surgical importance. That it was necessary for the surgeon to thoroughly understand these anomalies was obvious, from several points of view. A knowledge of the early development of the genito-urinary system made intelligible the resultant anomalies and various pathological conditions. We saw the possible development of congenital cystic kidney resulting from a failure of certain portions of the secreting renal tissues to become united with the collecting portion. Wilson had called attention to the probable development of the so-called hyper-



nephromata as neoplastic growths from similarly unattached secreting portions of the kidney.

Among 36 cases of gross renal and ureteral anomalies observed in their clinic during five years, 7 were found incidental to other abdominal operations; 12 were of the horseshoe type and 6 of the single or symmetrical type. Of 649 operations on the kidneys and ureters during this period of five years, there was an average of one serious anomaly associated with disease in every 26 cases. In the horseshoe form, 90 per cent were fused at the lower pole. At the point of union there might be only connective tissue (in 15 per cent of the cases). Usually the fusion consisted of renal tissue and varied from a small area to the full width and thickness of the kidney. Ninety per cent of cases were fused in front of the great vessels. The most common disease affecting horseshoe kidney was hydronephrosis, which might later develop into pyonephrosis. This hydronephrosis occurred in moderately young individuals, while pyonephrosis and lithiasis were usually seen in middle age or later. Tuberculosis was rarely seen. More horseshoe kidneys were found in women than in men, and more single kidneys in men than in women. When the kidneys were fused by heavy renal tissue, symptoms might undoubtedly be present. Rösing recently published cases in which the diagnosis was confirmed at operation. Despite the diagnostic data which had been given, as a rule the condition would not be recognized before operation. Braasch indicated, in addition to the cystoscope and radiograph, the great assistance of pyelography with colloidal silver injections. The lesson to be learned, when we did not have absolute data as to the condition of both kidneys, was to always explore the other kidney, usually through a separate incision, before the removal of a tumor of the kidney or the removal of a diseased kidney. In abdominal surgery, where the type of the presenting tumor was questionable, the kidney should be palpated before removal of the tumor. In some instances transperitoneal incision was indicated. The lateral incision described by W. J. Mayo would suffice in most cases. At operation the possibility of horseshoe kidney must be kept in mind, especially whenever difficulty was experienced in delivering the lower pole. This occurred in the writer's last case, where pyonephrosis of half of the horseshoe kidney was present. The renal tissue, nearly the size of the normal kidney, passed in front of the large vessels. After examination of the blood supply, the fused portion was divided and sutured with catgut. In a case of horseshoe kidney, which was not otherwise pathological, Rösing relieved the pain and general symptoms by division of the isthmus. E. S. TALBOT, JR.

**Stevens: Pathologic Lesions of the Kidney Associated with Double Ureters; Report of a Case of Hybernephroma.** *J. Am. M. Ass.*, 1912, lix, 2298. By Surg., Gynec. & Obst.

Stevens reports in detail a case of hypernephroma of the kidney associated with double ureters. He

discusses the embryology of double ureter and associated conditions. Except for rare cases of solitary kidney, when a blind ureter may be found on the opposite side, for every ureteral orifice in the bladder there is a separate renal pelvis not communicating with other pelves in the same kidney. He reviews the literature of double ureter.

L. G. DWAN.

**Harris: The Diagnosis of Ureteral Calculus by Means of the Wax-Tipped Whalebone Filiform Bougie Used with the Nitze Cystoscope.** *Surg., Gynec. & Obst.*, 1912, xv, 727.

By Surg., Gynec. & Obst.

The author explains his method of applying H. Kelly's idea of using a wax-tipped ureteral bougie for the diagnosis and location of ureteral concretions.

The author uses whalebone filiforms that are carrying an olivary tip, to the latter a wax pearl is attached by dipping it into melted beeswax; in case the operator should encounter an ureteral opening that would not permit of the passing of the olive enlarged by the wax coating, a wax spindle is attached around the shaft of the bougie two or three centimeters from the tip; the most essential point in the technique employed by the essayist is that he does not attach his wax until the bougie is passed through the cystoscope and is made to protrude out of the guiding channel far enough to be introduced into the distended bladder, the cystoscope is then guided over the bougie in the same manner as Nitze employed in his "Führungs Cystoscope"; before the bougie is introduced into the bladder its wax tip is examined with a magnifying glass in order to make sure of the integrity of its surface. In this way accidental scratching of the wax tip is avoided, and any scratch discovered on it after the bougie was inserted into and withdrawn out of the ureter can safely be ascribed to its contact with a concretion.

The essayist also suggests never to withdraw the bougie through the cystoscope after the examination is finished, but to withdraw the cystoscope alone, allowing the wax tip to remain in the ureter or bladder until the beak of the cystoscope has left the posterior urethra.

After the wax bougie is once removed its tip is washed in cold water and then inspected with a magnifying glass. All these technical suggestions mean certainly an improvement in the employment of the wax-tipped ureteral bougie if one cares at all to use this method, but it is very doubtful that the essayist will meet with approval of the majority of experienced urologists so far as his other statements and conclusions are concerned.

He claims for instance that a scratch is the best possible evidence for the presence of a stone in the ureter and that a negative result is equally reliable in excluding the possibility of calculus; how about a concretion embedded in a sacculum of a ureter or a calculus that is so covered with mucus, pus and débris that its surface will never come in contact with the wax tip that is gliding by? KOLISCHER.



**Deaver: The Diagnosis and Treatment of Renal and Ureteral Calculi.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912. By Surg., Gynec. & Obst.

Sixty cases of renal and ureteral calculi were reported. Attacks of typhoid preceded the onset of symptoms of stone. A catarrhal condition of the pelvic and ureteral mucosa was the chief predisposing factor in the formation of kidney and ureteral stones. The initial symptoms were attacks of renal colic, trauma, falls, blows, or kicks over the kidney area. Repeated attacks of colic were more frequently due to stones in the ureter. Location, type, frequency of attacks, and points of reference of same indicated the site of the stone. Physical examination in cases of aseptic and uncomplicated renal and ureteral calculi gave no assistance in diagnosis in one half or more of the cases, but was of more assistance in renal than in ureteral cases, because of the presence of a palpable mass in a percentage of cases. The diagnosis was much facilitated in difficult cases by the use of pyelographic methods. Tenderness and muscular rigidity were the most important physical signs.

Microscopic hæmaturia immediately following a severe attack of colic was suggestive of stone. The skiagraph was the most valuable means at our disposal in the diagnosis of urinary calculi. In five of his cases the X-ray failed to find the stone, which in three instances was found at operation—in the ureter once, and in the kidney twice. The use of wax-tipped catheters was said to be in these rare cases the court of last appeal in diagnostic procedure, but the speaker relied entirely on the clinical history. The most frequent causes of ureteral obstruction were either physiological or anatomical.

Before attempting any operation it was necessary to satisfy one's self as to the functional activities of the renal tissue, to be assured that the reserve force of the healthy or, at least, diseased kidney was sufficient to sustain the renal function in the event of the necessity of nephrectomy, which could not always be foretold.

Stones situated in the lower terminal (2.5 cm. of the ureter) were removed transvesically. In renal calculus the kidney was exposed and if possible delivered through an oblique loin incision; the stone was palpated, and an incision made over it and the stone removed with forceps. In nine instances palpation failed to demonstrate the presence of stone. In five of these it was correctly located with the needle. Needling was a practical, harmless, and valuable procedure in cases in which palpation failed. The total mortality in the operated cases of this series was 6.5 per cent. E. S. TALBOT, JR.

**Küttner: Struma Suprarenalis Hæmorrhagica.** *Beitr. z. klin. Chir.*, 1912, lxxxii, 291.

By Surg., Gynec. & Obst.

Küttner describes a case of hæmorrhagic cyst of the suprarenal capsule which he removed successfully by a kidney incision. The patient had none of the symptoms of Addison's disease which have

been observed in similar cases. In reviewing the literature, Küttner finds that his was the only case in which the tumor was removed, other cases usually being treated by what is called marsupialization (sewing the sac to the skin incision and packing it with gauze tampons which later are gradually removed). Extirpation is preferable. As to the diagnosis, the author recommends the use of colargol injections into the pelvis of the kidney (Voelker), which will, by the X-ray picture, make a differential diagnosis possible between this rare affection and the intermittent hydronephrosis.

CARL BECK.

## BLADDER, URETHRA, AND PENIS

**Lengemann: The Cæcum as a Substitute after Extirpation of the Urinary Bladder.** *Zentralbl. f. Chir.*, 1912, xxxix, 1697.

By Surg., Gynec. & Obst.

Basing his method upon cadaver experiments of Taddei and a procedure developed by Spannaus, who implanted both ureters into a detached end of the lower ileum, Lengemann proceeds as follows:

1. The cæcum, the ascending colon and 30 cm. of the ileum are divided from the remaining intestinal tract. The proximal end of the ileum is implanted into the transverse colon close to its blind end. The appendix is carried obliquely outward through the abdominal wall and its tip removed. 2. After an interval of a few weeks, during which time the ascending colon is repeatedly irrigated, the bladder is extirpated. Through a small incision in the peritoneum, the shunted portion of the ileum is pulled out and the ureters implanted therein. It is scarcely necessary to free the ureters from the surrounding tissue. Closure of the slit in the peritoneum, drainage and tamponade of the wound cavity conclude the operation.

The course in a case operated upon in this manner was quite favorable. A coprostasis developed in the rectum which caused severe diarrhoea. At first this was interpreted as being due to elimination of a portion of the colon, but digital exploration revealed the true cause. Removal was soon followed by normal evacuations. The urine at first was cloudy, foul smelling and contained much pus and mucus despite frequent irrigation with silver nitrate, tannic acid, internal use of urotropin and the use of a permanent catheter. Injections of yogurt-milk, diluted, into the newly formed bladder twice daily to change the bacterial flora, was followed by much improvement within a few days. After a few weeks the urine contained only moderate amounts of mucous flakes. The new bladder holds 500 cc. Continence is present. The patient prefers a permanent catheter, which is opened as required, to the repeated introduction of a catheter. The procedure meets all demands which may be made. 1. The substituted intestine is free from fæces, hence the danger of an ascending infection of the kidney is minimized. 2. The ileo-cæcal valve and



the peristalsis of the portion of ileum offers some protection against reflux in case of an impediment to evacuation. 3. The ureteral implantation, which can never be entirely relied upon, is extra-peritoneal, without tension or danger to the nutrition of the ureters. 4. The end of the loop of ileum is freely movable, permitting implantation of the left ureter without tension. 5. No blind pouch of intestine remains which may fill up with feces.

The method is applicable in the removal of the bladder for malignant growth, in many cases of contracted bladder especially in younger individuals, and in exstrophy of the bladder. E. C. RIEBEL.

**Martin: The Endoscopic Treatment of a Chronic Incrusted Bladder** (Traitement endoscopique de la cystite chronique incrustante). *El Siglo medico*, 1912, lix, 831. By Journal de Chirurgie.

The case reported by the author was a woman of thirty-three years, who had for two years suffered with dysuria of gradually increasing intensity. She had noted from time to time the passage of fine urinary gravel. There was no history of renal colic, and the region of the kidneys and ureters showed no tenderness on pressure. On the other hand, pain was complained of on pressure over the bladder. The vesical capacity was reduced to 20 cc. The urine was purulent, sanguinolent, and contained calcareous particles. The use of the metallic sound showed that there were no vesical calculi lying free in the bladder, but that the walls of the viscus were incrustated at numerous points. No tubercle bacilli were found in the urine, which, however, contained numerous organisms. The usual local applications and lavages had been tried without any apparent effect. Nitze's cystoscope could not be employed because of the diminished vesical capacity. The use of Luy's cystoscope showed that the vesical walls were covered with a grayish white exudate and at certain points calculeous concretions could be made out.

The treatment employed consisted of daily lavages of 1:3000 to 1:2000 silver nitrate solution. From time to time, Luy's cystoscope was introduced and portions of the false membrane and exudates wiped off with a sponge stick. The areas thus bared were then touched with a 2 per cent silver nitrate solution. The combined treatment was continued for one month, during which time marked improvement occurred, the vesical capacity increasing to three hundred centimeters.

The author did not find it necessary to leave a retention catheter in the bladder. In his opinion, the inconvenience of this procedure outweighed its advantage. The patient was able to return home after each treatment.

The author points out the difficulties of endoscopic treatment with Luy's apparatus. The necessity of replacing the light by the forceps when one wishes to make a topical application, frequently results in a displacement of the apparatus.

In the treatment of chronic cystitis, success

depends upon not giving up the case when the functional systems have disappeared unless cystoscopic examination shows that the ulcerative process has completely healed. If this rule is not scrupulously adhered to recurrence of the condition is inevitable. Possible accompanying renal and ureteral conditions should be investigated by the X-ray, and by ureteral catheterization. In this connection the reflex polyuria which may follow ureteral catheterization, and the possibility of hæmaturia being due to erosion of the ureteral mucosa by the catheter should be borne in mind in order to avoid misinterpretations. In the case reported, there was a polyuria of three and a half liters and, moreover, although the vesical urine, after treatment had been instituted, never showed the presence of any blood, yet the catheter urine from both ureters was found to contain blood cells.

SALVA MERCADÉ.

**Lorthioir: Treatment of Exstrophy** (Traitement de l'exstrophie de la vessie). *Ann. d. l. Soc. belge d. Chir.*, 1912, xii, 468. By Journal de Chirurgie.

In cases of exstrophy of the bladder, Lorthioir has given up intestinal implantation of the ureters because of the unfavorable late results. He describes his present method and publishes eight photographic plates which illustrate very clearly the different stages of the operation.

The first illustration shows a child of four months exhibiting the classical symptoms of this affection. The anterior wall of the bladder is absent and the mucosa of the posterior wall forms a protrusion, on the lateral aspects of which lie the apertures of the ureters from which urine flows drop by drop. The urethra shows a complete epispadias.

The second picture shows the formation of a channel between the upper portion of the vesical mucosa and the vagina, with a metal catheter in situ.

The third illustration shows the formation of cutaneous flaps from the skin adjacent to the vesical mucosa. Liberating incisions add to the mobility of these flaps and allow of sufficient play so that they may be sutured together in the median line without tension. A drainage tube is placed in the angle of the wound. It allows the escape of urine, the greater part of which, however, follows the vaginal catheter. The healing of the liberating incisions is slow, but after a few months the vesico-vaginal channel is well formed and healing is complete as is demonstrated in this case by a photograph taken seventeen months after the date of intervention.

L. MAYER.

## GENITAL ORGANS

**Moore: Prostatectomy, with Special Reference to the Sequels.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912. By Surg., Gynec. & Obst.

Moore stated in his paper that the unsuccessful results of prostatectomy had not been as faithfully reported as the successful ones. The mortality



after the upper and lower operations was practically the same in good hands, but the trend of the surgical world at the present time was toward the upper operation. Every surgeon should be proficient in both. Neither operation was a fit one for novices to experiment with, because both were serious major operations accompanied by some mortality.

In the upper operation, instead of cutting through the mucous membrane in the floor of the bladder it was better to crowd the finger into the internal meatus until the mucous membrane broke, and follow through this opening with the enucleation of the prostate, as taught by the author, and first published by McArthur.

Conservatism should control these operations, but it was not conservative to postpone operation until organic changes had taken place in the bladder and kidneys. Every general practitioner should realize that when he is first called to relieve retention from enlarged prostate he is assuming a grave responsibility, because infection at this time might end fatally in spite of the surgeon's best efforts. Enlarged prostate is easy to diagnose, but an operation should never be recommended simply because there was enlargement. A patient should never be introduced into catheter life without first having had the advantages of prostatectomy urged upon him. Old age was not a contraindication to the operation.

The results following prostatectomy were not always satisfactory, even in suitable cases. Patients frequently returned to the family physician, after having been operated upon, in very little better condition than before the operation, and sometimes worse. Impotence followed the operation in a certain percentage of cases; and until we knew just what caused the impotence we would be unable to prevent it. It was probably due to disturbance to the nerve supply. Gangrene of the bladder was an occasional sequel, to be prevented by handling the tissues as gently as possible. Careful search for stone should be made at every operation, because many times they had been overlooked. They undoubtedly formed after the operation in some cases. This should be prevented by emptying the bladder of blood clots and all detritus. When the bladder was in a reasonably good condition the cystoscope might be used to advantage, but with a badly infected bladder it did more harm than good, and catheterization of the ureters was unwarranted.

With improvement in our technique urinary fistulae were much less frequent than formerly, but were still an occasional sequel in cases that required unusually prolonged drainage. In cases of atony of the bladder the patient should be told that he would probably have to continue the use of the catheter after the operation, but that catheterization would be much easier and more comfortable.

Incontinence or dribbling was an occasional sequel after both operations, due to injury to the sphincters or their nerve supply. To prevent this sequel the sphincters should be entered as little as

possible, and in the upper operation more careful closing of the wound should be performed. The tendency in the upper operation was toward the more complete closing of the wound.

While present day prostatectomy was one of the most beneficial operations at our command, the number of failures and sequels was too numerous. May not less radical measures be better, such as removing the third lobe and dilating the prostatic urethra through a suprapubic opening, which was accompanied by neither complications nor sequels?

E. S. TALBOT, JR.

**Pedersen: Adenomatous Hyperplasia of the Prostate Gland.** *Med. Rec.*, 1912, lxxxii, 1162.

By Surg., Gynec. & Obst.

The author reports a case with operation and possibly consequent chronic suppurative nephritis with calculi in kidney, ureter and bladder. The following are the important features:

Male, white, 50 years old, single, retired policeman; family history negative; past personal history negative; former venereal history unimportant. Prostatectomy February, 1910, by a general surgeon after attack of retention of urine. Perineal prostatectomy, usual after treatment, uneventful recovery, except for secondary stricture. Dilated to 30 F. in March, 1910, one month after prostatectomy. Discharged cured May 16, 1910. Adenoma with tendency toward malignancy according to pathological report. All urinalyses negative. There was a subsequent incontinence of urine except that the patient could start and stop stream at command. A permanent urinal was worn. Cysto-urethroscopy was negative for definite cause of incontinency. Double seminal vesiculotomy for relief of symptoms failed, after preliminary cystoscopy which showed moderate cystitis and mucus from the right ureter. Severe cystitis appeared subsequent to the operation, which was caused by stones found in the bladder at a second cystoscopy. Ureteral catheterization showed an obstructed right ureter with pus and blood, normal left ureter. Urinalysis negative for tuberculosis, and showed slightly deficient urea and slow phenolsulphonaphthalein excretions. The right kidney was almost inactive. Radiography revealed several stones in the right kidney, a large stone in the right ureter near the bladder and two in the bladder. Radiography previous to the seminal vesiculotomy was not conclusive; showed no stones although plates seemed perfect. Operation March 24, 1912, stones removed from ureter, kidney and bladder in the order named within about two hours, considerable shock relieved by stimulation, returned to bed in fair condition, excretion of urine resumed, death at the end of thirty hours with pulmonary symptoms, seemingly embolism. Pathological report showed chronic suppurative nephritis of the right kidney in multiple foci and with multiple calculi; left kidney showed chronic diffuse nephritis. Five stones were recovered from the kidney, one large and five small



ones from the ureter and a small mass of crumbings from the vesical calculi after the litholopaxy. The article is accompanied with photographs of the X-ray picture, the stones, the gross specimens of the kidney and the sections.

**Schmidt: Conservative Surgery of the Testicle.**

*Beitr. z. klin. Chir.*, 1912, lxxii, 36.

By Surg., Gynec. & Obst.

Schmidt has investigated experimentally several important problems connected with the surgery of the testicles. He first studied the fate of the testicle transplanted into the abdominal cavity in young dogs as regards function — spermatogenesis and atrophy. In the literature a number of cases of retained testicle with mature spermatozoa in the ejaculate have been recorded. Rarely sperms have been found in a double cryptorchid. In most cases spermatozoa were absent both in the ejaculate and histologically. In the cases of abdominal testicle reported, no authentic instance of spermatogenesis is at hand. Since Rizzoli's first report in 1855 a number of cases have been reported in which the testicle was replaced from the inguinal canal into the abdominal cavity. No malignant changes occurred. On the experimental side the testicle has been successfully transplanted into the abdominal cavity in most laboratory animals. Schmidt has repeated the experiments of Stilling and Steinach in young dogs by putting the testicle into the abdominal cavity both with the attached tunica vaginalis and processus vaginalis and without these attachments. In dogs before the stage of puberty the testicle though transplanted did not atrophy previously but developed to the stage of the spermatocytes. Then degeneration gradually took place. After 6 months only Sertoli's cells could be found with some degenerated spermatogonia. The testicle as a whole was atrophied irrespective of its separation from the processus vaginalis or its tunica. These findings agree with the clinical observation that cryptorchid testicles are relatively well preserved in young individuals. The cause of the atrophy of the transplanted testicle is unknown. Schmidt is inclined to believe that trauma and the variable pressure to which the testicle is subjected in the abdominal cavity are the principal factors.

In practice we learn not to expect spermatogenesis in the normal testicle transplanted into the abdominal cavity, but only relief of symptoms. There appears to be but slight risk of malignant degeneration. In a young individual the retained testicle should if possible be replaced in the scrotum before the fifteenth year. There is no absolute proof, however, that a double cryptorchid previously sterile can regain his functional power after replacement of the testicle in the scrotum. Schmidt also found that the testicle transplanted under the skin of the inguinal region lost the power of spermatogenesis.

Schmidt investigated the results of implanting the ductus deferens in the testicle. It has been

found that spermatocytes are present in the testicle years after closure of the ductus deferens and even in congenital absence of the duct. The function of the testicle is not disturbed either by closure of the ductus deferens or by extirpation of the epididymis, e. g. for tuberculosis. An exploratory splitting open of the testicle in operating for tuberculosis of the epididymis is justifiable according to Schmidt's experimental observations. He found that the parenchyma of the testicle heals without scar formation in young dogs. In older dogs the scar is very slight. Occasionally there may be injury from slight hæmorrhages, but the whole of the parenchyma is not affected and the development of the testicle is not disturbed.

Bardenheuer in 1886 first suggested the conservative surgery of the testicle in tuberculosis by making a reservoir for the secretion of the testicle out of the resected ductus deferens. Since then numerous attempts to effect an anastomosis between the ductus deferens and the testicle have been made. Bolzer in 1891 first attempted a direct union of the duct with the tubules of the rete testis. In dogs the anastomosis of the deferential duct with the rete testis gives uncertain results. In practice after extirpation of the epididymis for tuberculosis the implantation of the severed duct into the rete testis is inadvisable because of the injured vessels and nerves. Direct implantation into the body of the testicle gives the best results. In dogs Schmidt has attempted the implantation of the duct into an opening in the testicular substance with a fine silk thread and also without any thread to anchor the duct. In 21 observations not a single direct communication of the duct with the seminiferous tubules could be demonstrated. The newly formed connective tissue formed an impassable barrier between the two. In two cases in Enderlen's clinic in which an implantation into the testicle was made there was no functional return.

The value of the interval secretion of the testicle for the organism as a whole is a sufficient indication for the conservative surgery of the testicle. This interval secretion is supposed by some to be related to the interstitial cells of the testicle. After X-ray exposures it has been found that the sperm-producing cells are destroyed, while the interstitial cells are preserved. The fact that the interstitial cells are preserved in the abdominal testicles is of considerable importance to the individual. Schmidt has found that following X-ray exposures to the testicle the adrenal and hypophysis were histologically unaltered while there was a slight increase in the weight of the hypophysis. ERWIN P. ZEISLER.

**Herbst: The Surgical Treatment of Chronic Seminal Vesiculitis by Vasostomy.** *J. Am. M. Ass.*, 1912, lix, 2242.

By Surg., Gynec. & Obst.

Herbst concludes his paper with the following summary:

1. Symptoms referred to the bladder and prostate are frequently relieved by vasostomy.



2. In certain cases vasostomy has relieved symptoms ascribed to enlarged prostate, just as did castration years ago.

3. Vasostomy is especially indicated in cases in which we have to deal with either a partial or a complete occlusion of the ejaculatory ducts.

4. This operation gives a fairly high percentage of cures in a class of cases which must either be relegated to the incurable heap or be subjected to a far more dangerous and difficult surgical procedure.

L. G. DWAN.

### MISCELLANEOUS

**Bonnet: Melanuria in Melanotic Tumors** (De la mélanurie dans les tumeurs mélaniques). *Lyon chir.*, 1912, viii, 582. By Journal de Chirurgie.

Melanuria, so called by Lannec, was described by Eiselt in 1861 as a symptom of melanotic tumors. The majority of authors confirm this opinion and attribute the dark discoloration of urine, when exposed to air or submitted to the action of oxidizing agents, as of great diagnostic value. Virchow and others, however, deny that this sign is pathognomonic. The urine may be very dark on emission, but this is unusual. It changes in air and in light, but does not become completely black, as is stated by the classic writers. To obtain this coloration it is necessary to add several drops of a reagent, the best of which is nitric acid, added to the urine when brought to the boiling point, perchlorid of iron, or the mixture of two parts of chromic acid and one part of sulphuric acid.

The origin of this special coloration of the urine is discussed. Virchow, Senator, and Litten attributed it to the presence of indican and believed it only existed when there were metastases in the liver. Pribram, Mörner, Kobert and Helmann believed it was caused by a special pigmentation similar to the melanin in tumors, which was found in the urine in the state of uncolored chromogen.

In reality melanuria is of little value, because it is inconstant and very rare (in fifteen personal cases of melanotic tumors, Bonnet only found it three times). It may also exist aside from melanotic tumors, in certain intoxications, infections, osteomalacia, secondary cancer of the liver (Bonnet: 5 cases), angiocholitis, lymphadenitis, and after the absorption of certain drugs.

Its appearance is late, and most authors think it diagnostic of generalization of the disease and the formation of metastases, and believe, with Nevveu, that its presence is an absolute contraindication to operation. However, there is nothing pathognomonic about this condition, since a certain number of Bonnet's patients died with a generalized involvement without having presented melanuria. Lucke and Eberth think that this sign only appears when there are secondary tumors in the kidney. Virchow, Hoppe, Seyler, Senator, and Litten admit that melanuria is characteristic of a generalized tumor formation in the liver. Bonnet holds to this last

opinion, because in the three cases where he found this symptom the liver was invaded and he observed four other cases of cancer of the liver which were non-melanotic.

CH. LENORMANT.

**Boggs and Guthrie: The Bence-Jones Proteinuria in Conditions Other than Myelomatosis: an Instance Associated with Metastatic Carcinoma.** *Bull. Johns Hopkins Hosp.*, 1912, xxiii, 353. By Surg., Gynec. & Obst.

The authors make the observation that while Bence-Jones proteinuria is usually associated with multiple myeloma, the relation is not constant. Also that the Bence-Jones protein has been found in conditions other than multiple myeloma. To support these contentions they have collected a number of cases from the literature, and also record a case of their own of metastatic carcinoma in which the presence of the Bence-Jones body in the urine was demonstrated, this case making the second authenticated instance of the sort on record.

In collecting their material they were struck by the fact that all the cases of Bence-Jones proteinuria have one point in common, namely, more or less extensive involvement of the bone marrow. They observe that the relation of multiple myeloma to Bence-Jones proteinuria cannot be specific, for other disease processes involving the marrow may lead to the excretion of this unusual body.

The authors believe that there is much to commend in the suggestion of Hopkins and Savoy that Bence-Jones proteinuria be viewed as an intermediary metabolic anomaly analogous to cystinuria and alkaptonuria but occurring at a higher level.

They believe that it is possible that the bone marrow has some function in connection with the endogenous metabolism of proteins, which may be disturbed by any one of a variety of disease processes and produce this unusual body in the urine.

GEO. E. BEILBY.

**Savidau: Exploration of the Kidneys in Urinary Surgery by the Determination of Nitrogen in the Blood and the Constant of Ambard** (L'exploration des reins en chirurgie urinaire par l'azotémie et la constante d'Ambard). *Thèse de Paris*, 1912, Nov. By Journal de Chirurgie.

In this thesis, inspired by Prof. Chavassu, the author studied the value of urea in the blood and of Ambard's constant as a means of examining the function of the kidney in urinary surgery.

To determine the ureic function of the kidney, according to the work of Ambard, two methods existed: one, the study of urea in the urine; the other, the study of urea in the blood. By these two methods it is impossible to determine exactly the functional value of the kidneys. Considering the urea of the urine, either from the total quantity excreted in 24 hours or the quantity of urea per litre, a relative value only can be attached to the figures of 30 grams for the total amount, or 20 to 25 grams per thousand of urea concentration, because



the total amount is increased or diminished by an alimentation more or less rich in nitrogen. Besides, the concentration, aside from tubular lesions, depends not only on the quantities of water ingested but also upon alterations in the glomeruli. In other words, urine can be watery because of a diminution of urea by disease or an increase of water by heavy drinking. It can also be very concentrated because the glomeruli (the filters) are diseased while the tubules functionate normally. Thus the exact state of the kidneys is not indicated. There is also a source of error in considering the secretion from each kidney.

By examining the secreted urines we can tell which is the better kidney, but not that the better kidney is a healthy one. The study of urea in the blood should give more precise information. The method of Widal and Saval is of value only if the nitrogen intake remains fixed, but, because of the difficulty of calculating it, the amount of nitrogen in the blood only is measured, and thus a source of error is introduced. A comparative study of the urea in the blood and urea in the urine, using the constant of Ambard, gives us a more precise method, according to the author, of determining ureic function.

First, in healthy kidneys there is a constant relation between urea of the blood and the total output of urea. Second, there is a constant relation between the quantity of urea for a given time and the concentration of the urea (quantity of urea per litre).

It is necessary to study simultaneously three factors to determine the secretion of urea: the urea of the blood (UR), the total output of urea (D), and the concentration of the urea (C).

In studying comparatively these three terms UR, D, and C, Ambard has been able to formulate the following three laws:

**Law 1.** When the kidney excretes urea at a constant concentration the output (D) varies proportionately to the square of the concentration of the urea in the blood (UR<sup>2</sup>). This first law Ambard determined by a series of experiments in which he varied the quantity of nitrogen (urea) taken in, maintaining constant the urea concentration by simultaneously ingesting water. This law can be formulated as follows: from two experiments in which the terms UR<sub>1</sub>, D<sub>1</sub>, C<sub>1</sub> represent the three terms of urea secretion in the second experiment.

$$\frac{D}{D_1} = \frac{UR^2}{UR_1^2} \text{ or } \frac{UR}{UR_1} = \frac{\sqrt{D}}{\sqrt{D_1}}, \text{ or } \frac{UR}{\sqrt{D}} = \frac{UR_1}{\sqrt{D_1}},$$

which equals a constant figure, is designated by the symbol K. This is the urea constant. The constant of Ambard is then the quotient of the urea of the blood multiplied by the square root of the urinary output of urea.

**Law 2.** When the patient passes urine with a variable concentration of urea (the concentration in the blood remaining constant) the total output of urea is inversely proportional to the square root of concentration of the urine. To vary this law it

is necessary to renew the urea by ingestion in proportion as it is taken out of the blood (a more delicate procedure).

However, this law, after two experiments done on the same basis, resolves itself into this formula:

$$\frac{D}{D_1} = \frac{\sqrt{C_1}}{\sqrt{C}}$$

or what is the same thing

$$D \times \sqrt{C} = D_1 \times \sqrt{C_1}.$$

**Law 3.** When the concentration of the urea in the blood is variable and the concentration of the urea in the urine is also variable, the urea output varies in direct proportion to the square of the concentration of the urea in the blood and in inverse proportion to the square root of the urea in the urine. This law is the result of the two former laws and is easy to verify.

The first of these three laws is the most important, since it was the one which permitted Ambard to evolve the constant,  $K = \frac{UR}{\sqrt{D}}$ , the concentration of the urea in the urine remaining constant. This concentration, however, rarely remains so, and necessitates a correction of the first formula by 0 times the square root of C. Corrected it can be written as follows:

$$K = \frac{UR}{\sqrt{D} \times \sqrt{\frac{C}{25}}}$$

The number 25 represents the urinary concentration, 25 per 1000.

The weight of the patient must also be taken into consideration, because an individual excretes more urea the more he weighs. The formula of Ambard was established on a patient of 70 kg., so a correction must be made by multiplying by  $\frac{70}{P}$  (P being the weight of the individual of whom one is seeking the constant).

The exact formula will then be

$$K = \frac{UR}{\sqrt{D} \times \sqrt{\frac{C}{25} \times \frac{70}{P}}}$$

The value of this constant varies between 0.050 and 0.070. Between these limits the urea function is assured. It is easy to verify this constant by determining successively a large UR, D, and C on different normal subjects and correcting for weight.

The urea constant, according to Ambard, is only a figure giving the relation of the urine of the blood to the square root of the urea output (excreted at 25 per 1000). This urea constant defines the functional value of the kidney for the excretion of urea.

When the patient has a constant two or three times larger than normal, it signifies that the patient would have to accumulate two or three times more urea in the blood than a normal individual if he excretes the same quantity of urine.



## TECHNIQUE

1. *Clinical.* The patient is kept in bed during a definite period, one half hour, and the urine and blood obtained. To obtain the urine, the patient is caused to urinate, the last drops being carefully collected, or he is catheterized to insure perfect evacuation. To obtain the blood, the patient is incised and the cupping glass is applied to obtain sufficient quantity to give 20 cc. of serum.

2. *Laboratory.* The urea of the blood and the urea of the urine are determined. From this is calculated the amount of urea per litre of blood and the quantity of urea per litre of the urine. These are designated by UR and C, and the quantity of urea in 24 hours by D. The patient is then weighed. We now have all the terms necessary for the formula of Ambard for determining the figure which represents the constant of Ambard.

In the second part of his thesis the author takes up the clinical study of renal function, using this constant, and arrives at the following conclusions:

1. When the urea in the blood is normal the constant oscillates between 50 and 75 cg. The conclusion can be drawn that the function of the diseased kidney is taken up by the helping one and operation can be undertaken.

2. When the urea content of the blood is markedly higher, attaining 120 cg. or more, the conclusion is drawn that both kidneys are diseased and surgical intervention is not advisable. In intermediary cases the compensation of the normal kidney for the diseased one is not perfect, but only approximately so.

3. The constant permits of estimation of renal function in affections of the ureters, and operation is possible if it is found sufficient. In affections of the prostate there are three groups of cases: first, those in which the urea content is lower than 50 cg. and the constant lower than 100; these cases should be operated. Second, those in which the kidney function is mediocre, the urea content of the blood being 50 to 60 and the constant about 150. Lastly, those in which the kidney function is bad — in which the urea in the blood equals 1 gm. and the constant 200 and more. These cases should not be operated. Finally, the author studies the action of the constant from anæsthetics, permanent and urethra catheterization and nephrectomy.

*Conclusions.* Anæsthetics and urethral catheterization definitely change the urea function of the kidneys. Permanent sounds markedly improve the condition. In nephrectomy, after the operation the constant is raised (due to chloroform), but soon becomes normal. When death follows nephrectomy it is due to urea insufficiency of the kidneys, with a constant about 120.

PIERRE CRUET.

**Vedel and Baume!:** Extragenital Soft Chancres (Chancres mous extragénitaux). *Montpellier méd.*, 1912, xxxv, 581. By Journal de Chirurgie.

In spite of its contagiousity and inoculability, the soft chancre rarely shows itself outside of the genital region. Therefore it seems interesting to give a résumé of the four following cases observed by the authors:

CASE 1. A man, 23 years old, had a soft chancre on the frenum of the prepuce and three ulcers on the antero-medial aspect of the right leg. It develops in the history, that after the appearance of the genital chancre, the patient had fallen on his knee causing a slight abrasion of the skin, and had also been struck on the antero-medial aspect of the same leg, with two small resultant abrasions. At the site of these traumatic abrasions, ulcerative necrotic inflammatory processes developed. It is probable that this man, while treating his soft chancre, also treated the wounds of his leg and inoculated these latter with bacillus of Ducray. The pus from each of these ulcerations on the leg and an inoculation on the lower portion of the right thorax developed a typical inoculation chancre. All these chancres healed under the combined influence of heat, peroxide of hydrogen, tincture of iodine, iodoform powder, and several applications of the thermo-cautery.

CASE 2. This was a man who entered the hospital because of an ulcerated purulent wound of the second finger, between the middle and terminal phalanges. There was a deep ulceration, with scalloped edges and with abundant pus and tissue débris. The existence of this ulceration concomitant with two soft chancres of the prepuce suggested that this was an ulceration chancre by inoculation. The bacillus of Ducray could not be found as it could in the preceding case, but the healing of this chancre resulted in an elongated cicatrization and was accomplished by the same therapeutic measures as in the preceding case.

CASE 3. A man 25 years old had a chancre the size of a 25-cent piece on the calf of his leg, which had developed from an insect bite — very probably from scratching with a sponge. He had inoculated it with the pus from a soft chancre on the penis. Treatment: iodoform and thermo-cautery.

CASE 4. This was a young man who came to the hospital with a subpubic ulceration coincident with a soft chancre of the prepuce on the upper part of the penis. There is no doubt that this is a case of subpubic soft chancre produced by secondary inoculation of chancre of the penis.

The absence in these four cases of inflammatory reaction in the glands which drain the regions of the site of the secondary inoculation is worthy of note.

J. DUMONT.



# SURGERY OF THE EYE AND EAR

## EYE

**Fox: Trachoma and Its Surgical Treatment.**  
*Ophth. Rec.*, 1912, xxi, 659. By Surg., Gynec. & Obst.

In many chronic cases it is impossible to eradicate the disease without operative interference; and of all the methods which have been adopted, the most successful in the hands of the author has been the grattage operation. The operation is performed in the following manner: The upper eyelid is grasped along its margin by means of Darier's forceps and, the edge being turned upon itself, the lid is everted until the retrotarsal fold is brought into view. A horn spatula should be inserted beneath the lid to protect the cornea. The exposed conjunctiva is first thoroughly scarified with a three-bladed scarificator. The granular tissue is then scrubbed with a toothbrush which has been steeped in a corrosive sublimate (1:1000) solution just before being used.

Immediately after scrubbing, the part is washed with a solution of the same strength. Another portion of the lid is now unrolled and the scarifying, scrubbing and washing repeated until the whole of the palpebral conjunctiva has been subjected to the treatment. If the lower lid is involved in the trachomatous process, it should be treated in exactly the same way.

In the soft, gelatinous variety of granulations the author has found that by using ordinary gauze sponges he was able to smooth down the elevations and clean off the conjunctiva of both lids, leaving it perfectly smooth, so that in a few days all evidences of the trachoma have disappeared. Especial care has been observed to reach the fornix and every other portion of the diseased surface. An antiphlogistic lotion is applied over the lids in addition to cold compresses day and night. The patient is put to bed and the eye pads are kept saturated for two or three days. If the operation has been properly carried out the results are exceedingly gratifying, and it rarely happens that the operation must be repeated on the same person, proving that a reinfection seldom takes place. The author feels convinced that this disease is a curable one, and that a modification of the immigration laws should be made in certain cases, especially where father and mother are free from trachoma and possibly only one child of the family is attacked. This child, under proper treatment, can be cured, and should not be deported as the present law demands.

In many cases of trachoma the swollen condition of the conjunctiva and cartilage prevents the free movement of the eyeball, and by exerting pressure produces pain and aids in the formation of pannus. Slitting the cartilage on the conjunctival surface

by Burow's method relieves this pressure and averts its consequent danger.

**Paton: Case Showing a Modification of Herbert's Flap Operation for Chronic Glaucoma.**  
*Proc. Roy. Soc. M.*, 1912, vi, 28.

By Surg., Gynec. & Obst.

The conjunctival incision is made 5 to 6 mm. from the limbus and the conjunctiva lifted toward the cornea. The narrow keratome is inserted about 3 mm. from corneal margin, being held between a radial and tangential position, but nearer tangential. After the keratome incision is completed, the blunt-pointed Lang's needle-knife is inserted, carried to one end of the incision, and a cut is then made obliquely forward toward the corneal margin, so that it finishes very nearly opposite the end of the

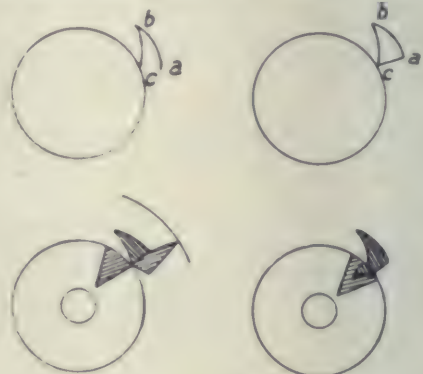


Fig. 1.

Fig. 2.

Fig. 1. Flap turned out and lying under conjunctiva.  
Fig. 2. Flap turned in and lying in anterior chamber.

keratome incision. A small radial cut is then made from a point toward point *c*. These three cuts map out a triangular flap held only by one tiny point of attachment at *c*. If this is cut through, the same effect is produced as in simple trephining. The aim, however, of the operation is not to cut through this, but to leave the flap attached and (*a*) either ease it out under the conjunctiva as in the right eye of present patient, or (*b*) turn it into the anterior chamber as in the left eye.

**Lamb: The Rational Method of Removing Fragments of Iron from the Interior of the Eyeball.** *Ohio St. M. J.*, 1912, viii, 610.

By Surg., Gynec. & Obst.

There are many objections to the use of giant magnets in removing particles of iron from the eyeball:



1. The patient's head must be moved while the instrument remains stationary.

2. A spicule of iron, drawn forcibly to the posterior surface of the lens, may perforate it and produce traumatic cataract.

3. The suspensory ligament may be torn and partial dislocation of the lens result.

4. Entanglement of the spicule in the ciliary processes may occur, with consequent difficulty in removal.

Why, then, subject the eye to all these dangers when a simpler method avoids them?

An incision through the sclera in the lower and outer quadrant of the eyeball and the application of the comparatively small magnet of Sweet will remove the fragment of iron with much less damage to the eye than the use of a giant magnet applied to the center of the cornea according to Haab's method.

That portion of the eyeball from just back of the ciliary processes to the ora serrata is very tolerant of operative procedures, heals quickly, does not participate in the visual function, is easily accessible from a surgical standpoint, and there are no important nerves or vessels likely to be injured. It therefore forms the ideal location for opening the eyeball for the removal of foreign bodies.

**Nettleship: Sarcoma of the Choroid of Unusual Chronicity.** *Proc. Roy. Soc. M.*, 1912, vi, 1.

By Surg., Gynec. & Obst.

Nettleship reports a case of sarcoma of the choroid in which the clinical history of the case extends over a period of 26 years.

The patient was first seen in 1886, when he was 51 years old. Vision 6/6 in right, and 6/6 in left, with a minus cyl. P. p. 11 in. in right and 13 in left. Fundus recorded as normal. One year later, right 6/6, left 6/12. Patient said print looked "crooked and squeezed up." Vision improved with a +0.50 cyl. and the ophthalmoscope showed an oval area about the size of the optic disc, below Y. S. of altered choroid consisting of a dark center surrounded by a pale zone; the dark part had a uniform dull, grayish black color with soft edges passing gradually into the gray belt.

Two years later the soot-like smudgy center and pale zone had not changed. The patch did not appear to raise the retinal vessels which passed over it.

When seen 17 years later, vision 6/9 and a reddish gray, rounded mass was seen with a 10 D. suggestive of sarcoma. One year later, vision 6/18, and the next year 6/36, the localized unpigmented mass now being 2 or 3 disc diameters in size. No painful sensations were present in the eye. When seen in 1911 by Mr. Lawford the eye was glaucomatous; nothing could be seen behind the lens and the eye was excised.

Microscopical examination showed an unpigmented spindle cell sarcoma. Nettleship has records of some 16 other private cases of smudge mark in the choroid; only a few of the cases were seen

again, and those not over a long period of time, so he could not tell the ultimate result.

He reviews the reported cases of minute sarcoma of the choroid, there being nine or ten in the past decade, in which minimal sarcomatous growth has been discovered accidentally in the examination of the eyeball after death. In Kipp's case the rather rapid increase of a small uncomplicated patch at the fundus led to removal of the eye.

C. G. DARLING.

## EAR

**Auerbach: A Case of Afebrile Sinus Thrombosis and Cerebellar Abscess Complicating Acute Otitis Media in an Adult.** *Laryngoscope*, 1912, xxii, 1367.

By Surg., Gynec. & Obst.

This case illustrates the difficulty of diagnosis of intracranial complications of acute otitis media.

The patient, a man of 51 years, gave a history of an attack of influenza followed by shooting pains in the right ear. The picture was that of an atypical otitis media with a normal temperature and a slow pulse. The only symptom suggestive of endocranial complication was some tenderness along the course of the jugular.

Incision of the drum membrane was followed by a purulent discharge and an improvement in general condition. There was no rise in temperature, no mastoid tenderness, no dizziness, and no nystagmus or other sign of intracranial irritation until the fourteenth day after the first examination. At that time temperature was 100°, pulse 84, with definite signs of sepsis. Operation followed at once, at which a deep antrum surrounded by eburnated bone and filled with granulation tissue was cleaned out and the middle fossa exposed, showing the dura covered by granulation tissue, which was removed down to the healthy dura. In the absence of symptoms neither the cerebellum nor the sinus was exposed. On the third day following, the patient had a chill; the temperature was 103°, a slight opisthotonos, a Kernig sign, and a slight rotary nystagmus were present, and the patient was markedly toxic.

The second operation exposed the middle fossa. The dura was a dirty gray. No pus and no abscess were discovered here, but a sinus thrombosis extended to the torcular herophili. An abscess cavity in the posterior fossa was exposed and drained. Exitus letalis occurred 8 hours later.

The most interesting feature is the total absence of the almost constant temperature curve of sinus thrombosis.

E. B. FOWLER.

**Bryan: Relation of Diseases of the Posterior Sinuses to Painful Conditions of the Ear.** *Laryngoscope*, 1912, xxii, 1362.

By Surg., Gynec. & Obst.

Cases of earache as a symptom of posterior sinus disease are rare but they occur often enough to make a record desirable.

The nose and the nasopharynx are very rich in sympathetic nerves. The spheno-palatine (Meck-



el's) ganglion, in the upper part of the sphenomaxillary fossa just under the sphenoidal sinus, is associated, by way of the vidian nerve and its branches, with the otic ganglion lying on a lower level and on a plane posterior to the sphenoidal sinus, and from this several branches go to the mouth of the Eustachian tube, one or two filaments to the auriculo-temporal nerve, and a communicating branch to the corda tympani. With these anatomical relations it may easily be seen how painful impressions in the ear are associated with diseases of the sphenoidal or posterior ethmoidal sinuses.

This is supported by a report of three cases with a history of severe pain in the ear and negative aural findings that were cured by operative treatment of the existing disease of the sinuses. E. B. FOWLER.

**Loughran: The Radical Mastoid Operation.** *N. Y. M. J.*, 1912, xcvi, 1275.

By Surg., Gynec. & Obst.

The object of the radical operation is the cure of a chronic mastoiditis, the chief symptom being a persistent otorrhœa; the pathological condition being a necrosis of the bony wall of the middle ear and ossicles as well as the additus and mastoid antrum, this necrosis resulting from a failure of resolution in an acute suppurative mastoiditis at some previous time, the otorrhœa being the only objective symptom.

Essentials for the proper healing of the wound cavity are summed up in the thorough removal of all diseased areas and the preparing of the cavity so that epidermatization will go on normally and with the least delay. This includes the complete removal of any foci of infection within the mastoid process and the middle ear cavity; the thorough curetting of the entrance into the Eustachian tube; the establishing of a perfect system of drainage for secretions during the process of healing; and producing, by sufficiently enlarging the external meatus, a satisfactory means of observation and treatment of the healing process.

The healing of the wound is a physiological performance consisting of the development of granulation tissue, varying in structure in different parts of the cavity, and the production of the epidermal layer which, beginning at the margins of the flaps formed from the posterior canal wall and placed in close approximation with the bony wall of the cavity, is encouraged to extend out over the developing granulation tissue and so produce final healing. The proper placing of the skin flaps is essential.

The granulation tissue should be encouraged to

fill up the entrance into the Eustachian tube and also the antral portion of the wound cavity so that the only permanent space will be that previously occupied by the middle ear cavity.

Improvement in hearing depends entirely on our ability to retain for the stapes a certain amount of elasticity as a conductor of sound waves. This is difficult on account of the tendency to contraction of the scar tissue in which the stapes is embedded.

Cosmetic results depend on the placing of the posterior incision and the form and size of the reconstructed external meatus.

**Voorhees: Labyrinthitis and Cerebellar Abscess.** *N. Y. M. J.*, 1912, xcvi, 1212.

By Surg., Gynec. & Obst.

One of the most important symptoms of labyrinthine disturbance is nystagmus. Nystagmus takes place whenever the vestibular nerve is irritated either pathologically or experimentally. This nystagmus is directed toward the irritated side, but if the irritative process goes on to destruction of the labyrinth, very marked rotatory and horizontal nystagmus to the unirritated (sound) side is produced. This latter nystagmus disappears in from three to fourteen days.

A second important symptom is dizziness with turning, either of the patient himself or of surrounding objects. This turning usually corresponds with the direction of the nystagmus.

With dizziness and nystagmus there is always periodic (inconstant) nausea and vomiting.

After the decline of a severe attack, which lasts from a few hours to two or three days, this dizziness goes over into marked disturbances of equilibrium, with ataxia of trunk muscles and inco-ordination of arms and legs.

Falling takes place in a direction opposite to the nystagmus and is influenced by the position of the head. When a labyrinth is destroyed there is, of course, complete loss of hearing.

In cerebellar abscess nystagmus is directed to the diseased side, remains stationary or increases from day to day, is rotatory with a strong horizontal element, and is inconstant. The dizziness is constant (not periodic) and is seldom combined with turning. There is a tendency to fall toward the diseased side, in one direction only, without reference to the direction of the nystagmus, no matter what the position of the head.

Nausea and vomiting are severe and constant when the disease becomes well marked. Hearing is lost only when the cerebellar abscess was preceded by suppurative labyrinthitis.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

**Heller: The Submucous Operation and Some of Its Difficulties.** *N. Y. St. M. J.*, 1912, xii, 707.

By Surg., Gynec. & Obst.

Three difficulties are emphasized: the initial incision, the securing of a wide flap under which to work, and the removal of the bony crest. The first is to be overcome by simultaneously cutting through mucous membrane and cartilage from the operated side to the perichondrium of the opposite side, holding the blade at right angles to the cut surface. After leaving the cartilage the incision extends down to the bone, across the floor almost to the level of the inferior turbinate. Having separated the perichondrium above down to the crest, where it is densely adherent to the periosteum reflected from the bone below (Ballenger), a semi-sharp elevator is inserted at the terminus of the original incision and, dissecting backwards, separates the periosteum from the nasal floor. Working toward the septum, the mucous membrane is lifted until only a bridge of tissue remains at the summit of the crest. This is readily severed and leaves a wide curtain extending from the dorsum above to the floor below, about at its junction with the inferior turbinate. This gives a wide space within which to work and insures at least one intact flap to replace should the other become lacerated. It is brought out that the operation is a plastic one, and all difficulties can be overcome by adhering to the lines of natural cleavage and avoiding undue haste.

**Baldwin: The Finger in Rhinoplasty, Improved Technique.** *Surg., Gynec. & Obst.*, 1913, xv, 720.

By Surg., Gynec. & Obst.

This successful and ingenious method was used with very satisfactory results by the author in the repair of two cases. The case here reported is that of a young woman 29 years of age, who from a lupus vulgaris, which had run its course, suffered the entire loss of nasal bones, cartilages and soft parts, leaving a large triangular opening. This was repaired in the following manner. The author, thinking it would be advantageous to have a double flap of skin (one continuous with the skin of the face and the other replacing the mucous membrane of the nose), secured this by making a flap low down on the right side of the abdomen, making three incisions corresponding to three sides of a rectangle, the fourth being a hinge and retaining its vitality until it had united to the finger. The skin of the abdomen was dissected up and the wound made by the flap was closed. The left ring finger was then split in the middle line of the palmar surface from the nail to the web, and the edges were dissected up from the bone, which was removed. This raw surface was

then applied to the raw surface of the abdominal flap, their edges being brought together by three silkworm gut sutures on either side. These sutures were left long to retain the bat-wing shape and size of the flap by tying them over a perforated copper splint which was cut from a Levis splint. Other coaptation sutures were laid along the edges of the flap. Protective dressings were then applied and the arm strapped to the side. Two weeks later the abdominal flap was released and the patient returned home with the copper splint in place.

The blood-vessels had been cut transversely in order that a uniform circulation in the flap should be attained in anticipation of the transfer of the finger to the face.

After a lapse of several weeks, the distal end of the finger was denuded of skin and nail including the matrix, the edges of the finger flaps were freshened up and slightly split, the tissues at the upper end of the field were undermined in order that the end of the finger might rest upon the frontal bone, and the internal flaps of finger and face were united with fine silk left long, after which the external flaps were carefully sutured to the skin and plaster of Paris applied to hold the trunk, arm and head in a fixed position. The part of the cast designed to hold the trunk and head was put on the previous day, facilitating the fixation under the anæsthetic. After three weeks the finger was detached, the result being pleasing in every way.

H. A. PORTS.

**Brown: Transplantation of a Piece of Cartilage in the Septum to Prevent Perforation after Submucous Resection.** *Laryngoscope*, 1912, xxii, 1347.

By Surg., Gynec. & Obst.

The author speaks of the common condition of septal deformity where there is a sharp spur of bone with membrane covering it so thin that it breaks at a touch, if it is not already eroded. He also shows that in such conditions the membrane of the concavity often dips down into a sharp groove, where it is easily injured, thus frequently causing tears or punctures opposite each other, no matter how great care is exercised in dissecting up the membranes. In such a case, in October, 1909, he took a piece of cartilage that had been removed from the patient's nose, cut it down to a thin plate and inserted it between the flaps of membrane to separate these two tears, in the hope that it would heal in and prevent perforation. The result was all that could have been desired. The patient disappeared from observation in two weeks, with a perfectly healed septum, the graft still being in place.

Brown reports two other cases, also clinic patients, with the same result, and then reports



four cases in private practice, where he was enabled to follow the after history. It seems that in all of these cases the membrane healed down smoothly over the splint of cartilage, which gradually became absorbed in the course of from six weeks to three months.

He commends this little precaution to others as a good preventive of a very common accident.

In his seven cases there was one partial failure, where the largest splint available was not quite ample to cover the entire tear.

A brief review of the literature is also given, one similar case of this kind being reported by Dr. Isabelle Kerr of Boston, in the *Woman's Medical Journal*, January, 1911.

**Butt: Some Considerations in Reference to the Nasal Septum.** *Laryngoscope*, 1912, xxii, 1351.

By Surg., Gynec. & Obst.

The author takes up the essential points in the embryological and early childhood development of the nose, showing that the period about the sixth year seems to mark the beginning of the forces and conditions that cause septal deflections. The septum is then for the first time set between the unyielding base of the cranium and the hard palate, and as the various forces of growth meet and oppose each other overriding and deflections often result.

He refers to the statement of Freer (*Annals of Otology, Rhinology and Laryngology*, 1910) that each constituent part of the septum has its own complete covering of periosteum or perichondrium which passes through the sutures, of importance because of the difficulty caused thereby in the elevation by blunt dissection.

The more common overriding of the cartilage, especially along the floor, are brought out with emphasis on the necessity of having the mucoperiosteal flap stretched between two points that are in the median line in order to get a good result.

The author also advises that the incision be made running "down over the septal cartilage" and at right angles "across the floor of the nose in the skin part of the vestibule."

E. B. FOWLER.

**Alles: Mucocele of the Anterior Ethmoidal Cells.** *Lancet*, Lond., 1912, clxxxiii, 1645.

By Surg., Gynec. & Obst.

Alles reports his case from the clinic of Fuchs of Vienna. The patient, aged 25 years, consulted for a well-marked exophthalmos of the right eye, which had been present since 3 years of age. At the junction of the upper and inner wall of the right orbit a hard nodular mass 2 cm. wide and 2 cm. long was found, which was diagnosed as a cholesteatoma. The case was operated by Fuchs, the ethmoidal cells drained from the outside of a quantity of brownish colored semi-gelatinous fluid and the frontal sinus opened. The cavity was packed with gauze. The patient died two days

after operation. Mucocele of the ethmoidal cells alone, without any of the other sinuses being affected at the same time, is rare. As to the causes of a mucocele there are two: it may be either caused by a chronic catarrhal inflammation of the mucous membrane lining the sinus, the ostium of which has become previously occluded; or it may be due to an occlusion of one of the ducts of the glands of the lining mucous membrane, and consequent dilatation of it. An interesting fact is the very long duration of the case, which is said to have begun when the patient was but 3 years old. As regards the symptoms, the patient had very few — only a dull ache over the tumor and an occasional supraorbital neuralgia. There was no history of any discharge from the nose. The most apparent diagnosis, both from the point of view of the hardness of the swelling and its long duration, was certainly osteoma. The prognosis of ethmoidal sinus disease is less hopeful than those of the other sinuses, owing to its proximity to the cranium and its contents.

D. C. BALFOUR.

**Thomson: Tuberculosis of the Larynx.** *Practitioner*, 1912, lxxxix, 243.

By Surg., Gynec. & Obst.

Tuberculosis of the larynx is a complication of pulmonary tuberculosis. Post-mortem examinations show that the larynx is involved in one half the number of all fatal cases.

The atriæ of infection are two, viz.: (a) from the surface of the mucous membrane of sputum, and (b) from the submucosa, the bacilli arriving from the lungs via blood and lymph streams.

The disease is twice as common in males as in females. The age is usually from 20 to 40, being unusual but not unknown in children under 10. It diminishes in severity and frequency as age advances. Since in early cases there may be no subjective symptoms, the larynx should be examined in a routine manner in every case of pulmonary tuberculosis.

The author then considers briefly the important points in diagnosis. He states that whereas in 1880 the disease was generally considered incurable, today complete and lasting cures are obtained in a fair number of cases. The outlook is not favorable in those cases where the laryngeal and pulmonary disease is widespread and accompanied by marked general symptoms as well.

There are three main lines of treatment to follow, viz.: (1) treatment of the patient and his pulmonary tuberculosis, (2) cure of the larynx if possible, (3) relief of the symptoms.

Hygienic and dietetic measures are important. Local sprays of cleansing and anodyne nature are useful. "Painting the larynx" with lactic acid has fallen into disuse. Tracheotomy to save life becomes indicated in extreme stenosis. Coincident syphilis calls for specific remedies. Pregnancy should be avoided and nursing forbidden. Tuberculin has not yet proven to be a very valuable curative substance.

FLOYD RILEY.



**Johnston: Large Papilloma of the Epiglottis Removed by Fulguration.** *Laryngoscope*, 1912, xxii, 1360. By Surg., Gynec. & Obst.

The report is of a case of a woman 68 years old, giving a history of shortness of breath that was gradually becoming worse.

Examination revealed a large cauliflower-like mass practically filling the supraglottic space. The greater part was removed through the direct laryngoscope. Pathological examination: papilloma with suspicious ingrowth in two places.

High frequency spark applied through the direct laryngoscope to the remaining portion of the tumor caused marked blanching, and after a second application a week later the remainder of the tumor disappeared so that no sign of the growth could be made out.

The author believes that fulguration will solve the problem of treatment of multiple papillomata in children and cites a case to uphold this view.

E. B. FOWLER.

**Belot: The Wisdom Tooth and Its Radiography** (La dent de sagesse et sa radiographie). *Arch. d'Elect. méd., exp. e. clin.*, 1912, xx, 583. By Journal de Chirurgie.

The radiography of the wisdom tooth is the most difficult of all dental radiographies from which to obtain clear and serviceable pictures. It is this difficulty, no doubt, which causes the stomatologist to dispense with radiography, which would be of great value in treating his patients. Belot, who is the father of dental radiography, has tried to perfect the technique in such a way as to give certain results in all cases.

By putting the internal surface of the tooth in contact with a small sensitized plate, held in place by various methods, he easily obtains excellent pictures of the front teeth, but it is very difficult to obtain good pictures of the posterior molars, especially when a little trismus is present. The endoradiography of Bouchacourt, in which the source of the X-ray is placed in the mouth, is not used in good practice.

The method of horizontal projection described by Belot enables us to obtain excellent pictures of the wisdom tooth. It necessitates the introduction of small plates into the mouth, the emulsion being in contact with the cutting surface of the teeth which are to be X-rayed and the position of the ampule being determined by the indicator, a device invented by Belot. Here also, the sensibility of the patient, the position of the tooth in respect to the ascending branch of the maxilla, and the presence of trismus are insurmountable obstacles which prevent a good plate from being obtained.

In all these cases, it is necessary to have recourse to the primitive method of applying the plate to the cheek and placing the head in the most favorable position. The picture is generally indistinct and the interpretation nearly impossible because of the projection of the two maxillary bones on the plate. In such cases, the stereoscope is of little use.

This instrument, however, can produce results by modifying the picture as (following the instruction of Belot) by varying the position of the X-ray focus the pictures of the maxillæ may be dissociated on the plate. This produces the effect of the maxilla farthest from the plate having slipped upward and behind. To get this result, the patient is placed on the table, a depression between cushions serving to lodge the shoulder. The head is in hyperextension and the maxillæ are held apart by a cork introduced between the incisors. In carrying forward the focus of the rays behind and below the ear, a shadow of the maxillæ is obtained at the point of contact of the plate, and by making the angle of incidence vary according to the cases very satisfactory images may be secured. Previous study on the dry cranium is very useful.

In this way it is easy to ascertain the presence or absence of the wisdom tooth, to determine its position, the direction of its roots, the state of its evolution, and the contour of its sac.

R. LEDOUX-LEBARD.

**Mummery: A Short Supplementary Note on the Nerves of the Dentine.** *Proc. Roy. Soc. M.*, 1912, vi, 23. By Surg., Gynec. & Obst.

Since reading a paper in June last, the author has been preparing fresh sections, and was successful in procuring a very instructive preparation by the Beckwith gold chloride method. The great difficulty in preparing such sections is in getting them parallel to the nerve-bundles for any considerable distance, and this has been one of the great sources of difficulty in tracing the ultimate nerve fibres to the main bundles of fibres in the substance of the pulp.

In the photomicrograph shown, which is from the cornu of the pulp of a human bicuspid, one can see a nerve-bundle termination in the pulp, spreading out into a brush-like expansion of nerve-fibrils which are traceable throughout their whole course from the nerve-bundle into the dentinal tubercles.

This work demonstrates very clearly and fully that the nerves of the dental pulp terminate in the dentine, a question which has puzzled microscopists and led to much controversy.

H. A. PORTS.

**Medalia: Chronic Alveolar Osteomyelitis (Pyorrhœa Alveolaris); Its Causes and Treatment with Vaccine; with a Bacteriological Study and Report of 115 Cases.** *Boston M. & S. J.*, 1912, clxvii, 868. By Surg., Gynec. & Obst.

This article comprises an investigation and report of 115 cases of chronic alveolar osteomyelitis (pyorrhœa alveolaris), with special reference to the establishment of its etiology by means of a bacteriological study of pus, chemical and bacteriological examination of the fœces, and urine and blood examinations; also, to establish the value of bacterial vaccines in this disease.

The cases were divided into three groups—incipient, moderately advanced and far advanced.



The treatment consisted of local, systemic and vaccine treatment. The local treatment was carried out by the patient's own dentist. The systemic treatment was principally attention to diet. The vaccine treatment was autogenous vaccine combined with the corresponding stock vaccine and was found to be more efficacious than either alone. In cases where no pus was found stock vaccine made up from several strains of other similar but more advanced cases was used. The doses varied from 50 to 100 million of pneumococcus vaccine and from 50 to 300 million of staphylococcus aureus vaccine. The dose of the streptococcus vaccine was from 15 to 75 million. The interval varied from five days in the beginning to 8 and 14 days later, according to the amelioration of the disease.

The results obtained in this series of 115 cases were: 92 per cent cures in the incipient stage, 93 per cent of cures in the moderately advanced stage. (The cases in both these groups had practically no looseness of teeth.) In the far advanced cases 43 per cent were cured and 47 per cent improved. Perhaps the most important point from the standpoint of the medical man is the large number of systemic disturbances that accompanied this dis-

ease. Among the incipient cases 35 per cent had either joint or muscular rheumatism, 50 per cent gastro-intestinal disturbances, and 14 per cent skin affections. The moderately advanced showed 38 per cent rheumatism, 50 per cent gastro-intestinal disturbances, and 12 per cent skin affections.

The following is part of the conclusions:

Pyorrhœa alveolaris, so-called, is in reality a chronic alveolar osteomyelitis. The sockets, which are the affected parts in this disease, are nothing more than enlarged medullary spaces of the maxillary bone.

Trauma is the predisposing factor in nearly all cases, while the pyogenic bacteria (principally pneumococcus, 106 times out of 112, either alone or together with staphylococcus, streptococcus, or *m. catarrhalis*) are the exciting factors in the etiology. A great many so-called rheumatic diseases and gastro-intestinal affections seem to be directly related to this disease. The vaccine treatment of chronic alveolar osteomyelitis, together with the proper attention to diet, cures or relieves the systemic diseases. Vaccine treatment together with local mechanical treatment yields by far the best results in this intractable disease.



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# INTERNATIONAL ABSTRACT OF SURGERY

MAY, 1913

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

### SURGICAL TECHNIQUE

#### ANÆSTHETICS

**Grunert: The Present Status of General Narcosis**  
(Der gegenwärtige Stand der Allgemeinnarkose).  
*Ergebn d. Chir. u. Orthop.*, 1913, v, 1.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author has gathered together the principal advances made in the field of general narcosis. Klapp has tried, by reducing the area of circulation, to reduce the quantity of narcotic necessary, and thereby decrease its toxicity to as small a point as possible. Meltzer and Auer have introduced a method of insufflation. The method of direct massage of the heart in chloroform narcosis, especially the subdiaphragmatic, has given good results. Chloroform has been used less because of late fatal complications. In ether narcosis the ether "rausch" has been more widely used, and the method of administration has been improved by the so-called gas-ether method. The "rausch" with ethyl chloride is more often employed. Lotheissen has experimented with the oxide of ethyl chloride. Many attempts have been made to combine narcotics, such as scopolamin and pantopon in place of scopolamin and morphin for hypodermic injections, especially as an aid to inhalation narcosis. Its combination with nitrous oxide is gaining adherents in Germany (Neu, Gottlieb, and Madelung). Intravenous narcosis is still in the experimental stage. Besides the intravenous ether narcosis, the intravenous hedonal narcosis must be mentioned, and especially the isopral-ether mixture recommended by Burkhardt. Dumont opposes rectal narcosis.

The greatest precaution must be exercised in administering the ether vapors, but they can be administered with less danger by using a solution of ether according to a method advised by Arnd.

BRUNN.

**Grayson: Eight Years of Chloroform Anæsthesia in Nose and Throat Surgery.** *Laryngoscope*, 1913, xxiii, 61.  
By Surg., Gynec. & Obst.

The author gives his experience with chloroform as an anæsthetic in more than 3800 operations at the Hospital of the University of Pennsylvania. His defiance of the deep and almost universal prejudice against chloroform in the Middle and New England States was occasioned by the many objectionable features of ether in the surgery of the nose and throat. The operations in which he has employed chloroform include tonsillectomy, adenectomy, the correction of septal deformities, certain of the sinus operations and several tracheotomies.

He employs the "open method" of administration with the Esmarch mask, covering this, not with a single thick sheet of flannel or other comparatively impervious-to-air material, but instead with from four to six layers of ordinary surgical gauze, the number depending on the age and general condition of the patient. The precautions taken to combat the supposed dangers of this anæsthetic have consisted in a careful preliminary investigation of the vitality of each patient, the invariable use of a freshly opened bottle of chloroform, close and constant observation of the patient during the induction of anæsthesia, and the most scrupulous care regarding every detail of the administration of the anæsthetic. Although his cases have included many instances of cardiac valvular insufficiency, he has yet to meet with his first accident, and he concludes that it is much more prudent and easy to prevent accidents than to cope with them successfully should they be permitted to occur. He does not believe that the cardiac failure and other mishaps of chloroform anæsthesia, however sudden and unprovoked they may seem, ever occur without both warning and provocation. He cannot agree with those who think this anæsthetic treacherous,



and he is convinced that many of the fatalities that have occurred under chloroform anæsthesia have been attributable not so much to the chloroform itself as to carelessness in its use.

**Keppler and Breslauer: Intravenous Narcosis**  
(Zur Frage der intravenösen Narkose). *Deutsche Ztsch. f. Chir.*, 1913, CXX, 265.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors report a series of investigations pertaining to the application of various narcotics in securing general anæsthesia through intravenous injections. The shortcomings of the various methods now in use to produce general anæsthesia are reviewed. There are two avenues along which improvement in narcosis is traveling; first, by combining narcotics, and second, other places of application in order to get rapid absorption. The dangers and difficulties of rectal and subcutaneous anæsthesia are gone into. Intravenous anæsthesia was used as early as 1872, and to-day there are three groups of reagents used for the purpose: first, total anæsthesia acquired through the injection of cocain and its substitutes into the blood (this has been tried by Ritter on animals only); second, narcosis produced by a solution of chloroform and ether; third, the injection of a solution of the urea derivatives, urethan, hedonal, etc.

The authors object to the first method because it is not a total anæsthesia, a true narcosis, but only an elimination of the nerve tracts and end apparatus which is entirely different from narcosis of the ganglion cells. The latter are only affected by the severe toxicity of the alkaloid, not narcotized. Ritter discovered that through the general action of cocain by way of the blood stream, the sensory fibers are made non-sensitive before the general nervous system is poisoned. The other two methods of intravenous narcosis aim at producing the ordinary cerebral anæsthesia, a true narcosis or hypnosis, using a portal of entry other than the lung. In these two methods of producing general anæsthesia two principles are involved—a volatile or a non-volatile reagent is used. A volatile solution, in passing the lesser circulation on its way to the brain, loses some of its strength by exhalation from the lung. Its concentration is therefore affected. The amount given off varies, but is considerable. The advantage of this is the rapid elimination of the reagent. The disadvantages are that the respiratory organs are affected, although to a less degree than in the inhalation method; that large amounts of the reagent are needed, although the blood pressure is not affected; the low boiling point; thrombosis, which can be avoided by using Hagemann's solution; and the continuous administration without causing stagnation at any point.

The non-volatile reagents are not affected by their course through the lungs, but they have their disadvantages. Among these may be mentioned their insolubility; the length of time they remain in the body, so that the patient sleeps hours after the

operation, predisposing to pneumonia, asphyxia from dropping backward of the tongue, etc. Attacks of vomiting, excitement and paralysis of the respiratory center occurred in 8 out of 530 cases. Urethan is more soluble than hedonal, but it forms a solution too concentrated and non-isotonic.

All venous narcosis is still hampered with large apparatus, continuous infusion, and difficulty in shifting the patient. The ideal intravenous injection for narcosis should consist of a single injection of a few cubic centimeters of a chemically inert narcotic that acts specifically on the cerebral cortex and has no effect on any other organ. Its toxic range should be broad enough to eliminate any danger, and the narcotic action should pass off rapidly after the operation. With this ideal in mind the authors tried the more important reagents on animals.

The true narcotics, ethyl bromide, nitrous oxide, and ethyl chloride, are of no use since they cause cyanosis, dyspnea and cessation of respiration; also their boiling points are too low. The hypnotics and sedatives of the alcohol group also fail to fill the requirements. Chloral hydrate, like isopral, causes a lowering of the blood pressure (down to 80 mm.) and often a cessation of the heart beat, as in chloroform death. The derivatives all have the same effect, and in addition the patient sleeps for hours after the operation. After the use of trional or paraldehyde, the patient sleeps for two days or more. Amyl hydrate caused nervousness and clonic cramps. Chloral, formamid, sulfonal and veronal dissolve with great difficulty. The sodium salt of veronal is too dangerous because of the paralytic effect on the medulla. Urethan and hedonal had to be given in doses entirely too large to be of benefit; urethan caused infarcts in the kidney in one instance. The bromides are too weak.

The narcotic alkaloids on the other hand work very well, especially the opium group. Morphin and opium given intravenously caused a number of secondary symptoms, vomiting, haziness, etc.; but working with dogs it was possible to get sufficient narcosis without causing these secondary symptoms. Intravenous injections of pantopon came nearer the ideal than anything else which was tried. The authors used it in 50 cases ( $\frac{3}{4}$  to 1 cg. per K. body weight) and in all narcosis was sufficient for the operation, no death resulting. Only 10 cc. of the solvent was necessary. Vomiting, albuminuria, damage to the heart or lungs did not occur, and the patient was awake in 15 minutes after the narcosis was stopped. These fine results are due to the fact that complete narcosis of the cerebrum can be obtained without abolishing the reflexes. The muscle tone is partially retained, but it was not so prominent as to interfere with the operator. When applied to the human being pantopon failed, as no analgesic action occurred; and when larger doses were given a long post-operative sleep resulted. The possibility of success, therefore, lies in discovering a preparation which acts on man as pantopon acts on dogs.

PEITZSCH.



**Noel and Souttar: Anæsthetic Effects of the Intravenous Injection of Paraldehyde.** *Ann. Surg., Phila., 1913, lvii, 64.*

By Surg., Gynec. & Obst.

Paraldehyde has long been recognized as in many ways the most perfect hypnotic. To avoid unpleasant taste and preliminary excitement, intravenous administration is resorted to. Its very rapid action is delayed by dilution.

The authors mix 5 to 15 cc. of paraldehyde with an equal amount of ether and dissolve this in 150 cc. cold 1 per cent sodium chloride in sterile distilled water, or when necessary, ordinary boiled tap water. The solution should be perfectly clear after shaking. The Fildes and Macintosh apparatus for salvarsan is used, and the solution is injected at a temperature not exceeding 25° C., at the rate of 5 to 10 cc. per minute.

The most striking results were seen in the case of alcoholics, both acute and chronic.

At each instant the patient exhibits the maximum effect of the dose given, so its administration is under absolute control.

No after effects of any kind occurred, though the method was used in cases of grave cardiac and pulmonary diseases.

It is not suggested as a substitute for the slower but more lasting hypnotics; but the authors never failed, even under the most trying circumstances, to induce a condition resembling normal sleep in 60 seconds. No record could be found in the literature of the previous intravenous use of paraldehyde.

H. W. KOSTMAYER.

**Seidel: Mandibular Anæsthesia; Anatomical and Clinical Experiments to Avoid After Effects** (*Die Mandibularanästhesie; Anatomische und klinische Untersuchungen zur Vermeidung ihrer üblen Folgeerscheinungen.* *Deutsche Zahnheilk. in Vortr., 1913, xxviii, 31.*

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The after effects of mandibular anæsthesia are often difficulty in swallowing and trismus. According to Seidel, these are to be attributed to the effects of infiltration of the internal pterygoid and the superior pharyngeal constrictor muscles by the novocain-supravein solution. He rejects the customary technique of mandibular anæsthesia in which one proceeds from the premolar or first molar of the sound side directly to the mandibular foramen. He considers the method given by Braun, of beginning at the retromolar trigonum and passing along the bony wall of the ascending ramus to the mandibular foramen, to be better. He has demonstrated by anatomical investigations that the position of the foramen mandibulare varies and is therefore difficult to find. The upper half of the mandibular sulcus, where the nerve lies in loose connective tissue between the bone and the musculature, is sufficient for the deposition of the liquid. The needle of the syringe is 0.5 to 0.7 mm. thick and 4.5 cm. long, and is made of platinum-iridium so that it may not break within the tissue.

HERDA.

**Braun: The Advantage of Local Anæsthesia for the Reduction of Fractures and Dislocations** (*Die Anwendung der Lokalanästhesie zur Reposition subcutaner Frakturen und Luxationen.* *Deutsche med. Wchnschr., 1913, xxxix, 17.*

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Fractures were reduced under local anæsthesia as early as 1885. In that year Conway, an American surgeon, and a little later Von Reclus reduced fractures under local anæsthesia without pain. In 1907 and 1908 Lerda and Quénu reported a large number of cases of fractures in various positions of the body, where reduction was done successfully and painlessly by the local injection of cocain solution. Later Braun reduced fractures under local anæsthesia using a 1 per cent solution of novocain-adrenalin instead of cocain. In joint fractures the solution is injected directly into the joint. Braun further recommends the use of this solution in cases of aseptic arthrotomy, especially in the knee joint, for the removal of loose bodies in a joint, meniscus operations, suturing of the patella in cases of fractures, etc. It is also used in the reduction of dislocation of the shoulder, elbow, and femur. Conway reports that he had used local injection in a case of dislocation of the elbow joint. The solution is injected both on the central and peripheral side of the dislocated joint.

Braun reports that he has used such injection in over 50 cases of fractures and dislocations during the last year. In 2 cases of dislocations of the hip (ischial and obturator) he was able to procure complete anæsthesia and relaxation when the anæsthetic was injected. The position of the head of the femur was first palpated and then 25 cc. of a 1 per cent solution of novocain-adrenalin was injected into the palpated area. This was followed by the injection of 20 cc. of the same solution into the acetabulum. In doing this Braun mentions the following procedure: the puncture is made with a needle 10 cm. long, just back of the anterior superior spine, following the bone until it reaches the acetabulum, after which 20 cc. of the solution is injected. According to Braun the reduction of dislocations was easier under local than under general anæsthesia.

HIRSCHEL.

**Läwen: Extradural Anæsthesia** (*Die Extraduralanästhesie.* *Ergebn. d. Chir. u. Orth., 1913, v. 39.*

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Läwen gives a compilation of the literature and reports his own experience with extradural anæsthesia. In the different chapters are treated: the development of epidural injections for sacral anæsthesia; the anatomy of the epidural space, which is illustrated by photographs of pelvic preparations; examination of the different material in the cavum epidural and the technique of extradural anæsthesia, with the author's own method and the results hitherto obtained. In the last chapter, the author opposes high extradural anæsthesia as advocated by Schlimpert, which he considers rather a combination of local anæsthesia with the general



effect from the resorbed novocain. He puts his faith in his own technique and advises against undertaking those major operations which cannot be performed under this form of extradural anaesthesia. Since his last publication, extradural anaesthesia has been employed by his method in 65 cases, 41 Whitehead operations or cauterizations of hæmorrhoids, 1 extirpation of a melosarcoma of the anus, 8 operations for tuberculous and other anal fistulæ, 2 for anal fissure, 1 extirpation of a rectal polypus, 11 operations on the urethra, and 1 secondary perineorrhaphy. In three cases anaesthesia failed; four times during operation narcosis had to be added after extradural anaesthesia had been attempted. Extradural anaesthesia should be used in women only for vaginal operations, following the author's directions strictly. Fat patients should be excluded, as should the senile, the arteriosclerotic, and those suffering from heart disease, nephritis, anæmia, or functional or organic disorders of the nerves. SCHLIMPERT.

**Bleek: Extradural Anaesthesia for Surgical and Gynecological Operations** (Ueber Extraduralanästhesie für chirurgische und gynäkologische Operationen). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 122.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Bleek gives a report of 48 operations performed with extradural anaesthesia. The operations were for hæmorrhoids, rectal fistulæ, perineal laceration, uterine displacement or extirpation by the vaginal route, round ligament shortening by the Alexander-Adams method, besides a Bassini herniotomy. A 2 per cent novocain solution was injected with four or five drops of adrenalin and sodium bicarbonate. The usual injection is 20 cc., equal to 0.4 novocain, but Bleek has employed a maximum dose of 28 cc. "Dämmerschlaf" was avoided as a rule, and occasionally 0.03 pantopon plus 0.003 scopolamin was first injected. The results were satisfactory in 29 cases, but in 19 an additional anaesthesia was necessary. Among the latter cases appear most of the vaginal hysterectomies and uterine interposition operations, the Bassini operation, and the sectio alta. One severe complication in a vaginal total extirpation, came on as a paralysis of both legs and disturbance of hearing, but both were finally cured. The author believes that this accident was due to a technical error, an intradural injection. He therefore warns against such an error, and advises against the use of a larger quantity than 20 cc. of a 2 per cent solution. The so-called "high sacral anaesthesia" is condemned as being the cause of prolonged "Dämmerschlaf." FREUND.

#### SURGICAL INSTRUMENTS AND APPARATUS

**Lusk: An Instrument for Establishing Fæcal Drainage; Its Use on a Case, and Consideration of Site for Making a Fæcal Fistula in Low-seated Intestinal Obstruction.** *Ann. Surg.*, Phila., 1913, lvii, 106. By Surg., Gynec. & Obst.

The instrument compresses the bowel in a circle around a perforation, between a ring introduced

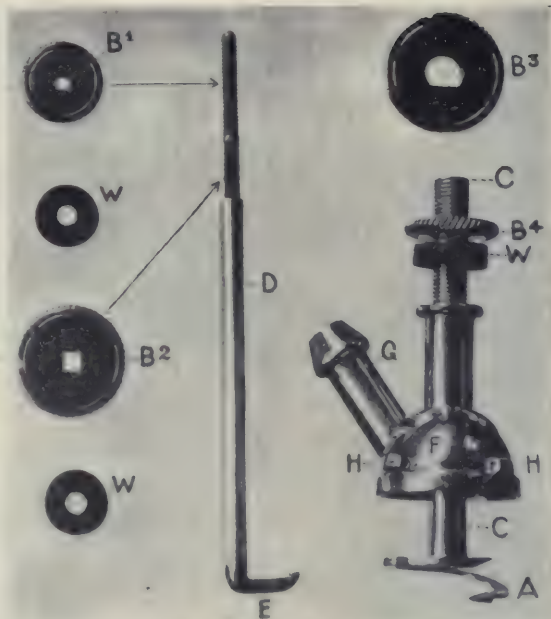


Fig. 1. (Lusk.)

within the bowel and a cap outside. Connecting with the latter is a tube for drainage, which mechanism maintains a water-tight joint around the perforation long enough for adhesions to form between the bowel and the abdominal wall. No sutures are used, the instrument being tied to the abdominal wall.

The instrument was used in five dogs and one man, each time without peritoneal infection. In the first dog no drainage was used, and a phlegmon of the abdominal wall caused his death. In the other cases a strip of gauze along the juncture of the instrument with the bowel obviated this sequel. In the patient the fistula, established through a right transrectus incision just below the level of umbilicus, was 12 feet from the cæcum, and after primary relief distention recurred. Patient lived 22 hours. The lower ileum lay in front of the ascending colon.

**Technique.** The technique of using the fistula instrument was worked out on cadavers with distended intestines, so that it must yet receive the test of experience before it can be thoroughly approved. A holding thread catches deeply the presenting bowel at a site which, on relief of the distention, will permit slack to be drawn into the wound. An opening about  $\frac{1}{4}$  inch in diameter is made near the thread, allowing the escape of gas with retraction of the abdominal wall, so that the bowel can be drawn by the thread into the wound in a tent-like fold. Through the opening the cork-screw spiral A (Fig. 1) is introduced. Just before the opening comes to the corner where the binding post attaches the spiral A to the central shaft C,



the point of the spiral will catch on the mucosa, which obstruction must be freed by pulling on the intestine in advance of the opening before the latter can be made to round the corner. The opening is then brought into position around the central shaft. The spiral, now within the bowel, is converted into a complete ring by means of a manipulating apparatus (D, E, B<sub>1</sub>, B<sub>2</sub>), and against this ring the cap F outside is then made to evenly compress the intervening tissues.

When a transverse wound opposite the iliac spine

is used, it is recommended that the instrument be attached by its four loopholes (H) to the aponeurosis of the external oblique about 1 cm. from its cut edges, and at the inner angle of the wound to draw together the internal oblique and transversalis muscle fibres and peritoneum around the extruded bowel. A narrow gauze drain is laid around the base of the instrument beneath the fixation sutures before the latter are tied. The ends of the fixation stitches should be left long to facilitate subsequent removal.

## SURGERY OF THE HEAD AND NECK

### HEAD

**Hall: Two Cases of Colloid Tumor of the Third Ventricle Causing Death.** *Lancet*, Lond., 1913, clxxxiv, 89. By Surg., Gynec. & Obst.

The author reports two cases of colloid tumor, each about the size of a marble, occupying the anterior part of the third ventricle. The first patient died a few hours after being first seen in a semi-comatose condition. The second died suddenly with little previous history except headache. The author describes the pathology of the tumor, which consisted of structureless hyaline matrix containing, at wide intervals, epithelial cells in various stages of degeneration. He was able to collect in all 9 cases of such tumors, and limits himself to the pathology of the condition.

DONALD C. BALFOUR.

**Oppenheim: Clinical Peculiarities of Brain Tumors** (Ueber klinische Eigentümlichkeiten kongenitaler Hirngeschwülste). *Neurol. Zentralbl.*, 1913, xxxii, 3.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Four cases are reported in which Oppenheim made a diagnosis of angioma of the brain. The condition is recognized by the presence of angioma elsewhere in the body, angiopathic or congested conditions, or only congenital malformations, besides the symptoms of brain involvement. Epileptiform attacks are prominent, and are of the cortical type rather than idiopathic. In addition there are attacks or symptoms of paralysis of one half of the body, epileptiform in nature, which point to a lesion in the cortex or central ganglia. Pressure symptoms are absent or only accompany the attacks of paralysis. Of importance is the protracted course with intervals without symptoms, and the fact it manifests itself after trauma or psychical excitement.

WERDE.

**Archambault: A Contribution to the Symptomatology of Cerebral Abscess, with Especial Reference to Diagnosis and to Indications for Surgical Intervention.** *Albany M. Ann.*, 1913, xxxiv, 6. By Surg., Gynec. & Obst.

Despite the fact that the last decade has furnished an exceptional number of valuable publications on the diagnosis and treatment of cerebral abscess, we

will stand sadly in need of additional diagnostic data before we can hope to fully materialize the unquestioned efficiency of surgical intervention in this particularly fatal affection.

The symptoms upon which greatest reliance can be placed in reaching an early diagnosis of cerebral abscess, and the clinical developments which furnish the strongest indications for operative intervention, may be jointly summarized in the following considerations:

1. Of general symptoms, the febrile reaction when present, the early appearance of psychic manifestations such as have been previously described, persistent headache, frequently of a dull and constricting character, changes in the blood picture, and the slowing of the pulse rate, are by far the most important. Insufficient in themselves to warrant surgical interference, they acquire considerable value in the presence of a previous history of traumatism or of otitis media; when associated with local symptoms, they complete the indications for operation.

2. The appearance of symptoms of focal cerebral disorder are of the very greatest importance, both for topical diagnosis and for well-directed and intelligent operative procedure. It is only when taken in conjunction with the general symptoms mentioned above, however, that they clearly point to cerebral abscess. Here, as elsewhere, the well-known rule formulated by competent and experienced clinicians is to be applied. A diagnosis should never be made from one symptom alone, but from a careful survey of all the symptoms present, and particularly from the predominance of certain of them, as well as from the mode and rapidity of their development. It is in this respect that the hemiplegia which has furnished the essential motive of this communication assumes such great significance. This hemiplegia represents more than a symptom, it almost constitutes a syndrome. It may appear either early or very late in the course of the disease. When it occurs in the early stages, it indicates that the Rolandic area has probably been primarily involved, and it is here that the symptom attains its maximum diagnostic value. It enables the surgeon to intervene during the stage of initial en-



cephalitis, before the actual formation of an abscess-cavity, and consequently before any very material damage has been done to the brain centers. Under such circumstances, the chances of obtaining remarkable restoration of function are appreciably increased. When the progressive hemiplegia is a late manifestation of cerebral abscess, it is due, evidently, to the secondary extension into the sub-cortex of the Rolandic area of an already matured abscess originating from some adjacent region of the brain, as, for instance, from the frontal lobe or the temporal lobe. The hemiplegia still retains its full significance, it still remains an imperative indication for intervention, but, of course, as considerable destruction has already occurred, complete retrocession of the paralytic disorders can hardly be expected.

3. The occurrence, at any time in life, of a hemiplegia which starts as a monoplegia and requires several days for its full development, especially if it be associated with either fever, persistent headache, hebetude, or distinct blood changes, with any or all of them, supplies all the indications necessary for immediate surgical intervention.

4. The apoplectic onset, in a young adult who is neither syphilitic nor tuberculous nor alcoholic, of a localized paralysis associated with convulsive manifestations and accompanied by fever, strongly indicates cerebral abscess and justifies, in the great majority of instances, speedy operative measures.

5. The more or less sudden appearance of aphasic disorders or of a monoplegia in a subject previously suffering from otitis media implies almost necessarily the existence of cerebral abscess and practically suffices to warrant surgical treatment.

**Mees: Extirpation of the Cerebellum in a Case of Congenital Occipital Hydrencephalocele** (Kleinhirnexstirpation bei einem Fall von angeborener Hydrencephalocele occipitalis). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In an infant 2 days old an occipital hydrencephalocele the size of the head of the child was operated upon. The operation seemed necessary because of the size of the tumor and because of the danger of infection by an existing decubital ulcer. After opening the meningeal sac a portion of the brain was found which was diagnosed as cerebellum. It was the size of a hen's egg and contained a hæmorrhagic infarct. A later histological examination confirmed this diagnosis. Since the reposition through the narrow bony opening was impossible, and since the great intracranial pressure could not be reduced even after puncture of the lateral ventricle, ablation of the cerebellum was undertaken. This was a year and a half ago; since then the child has developed slowly but relatively well. The clinical indications of the absence of the cerebellum are nystagmus, absence of the corneal reflex, difference of the muscular tone of the upper and lower extremities, and vomiting. Among the 75 cases in the literature 4

cases of occipital encephalocele with a cerebellum as the hernial content are mentioned which were successfully operated. A fifth case died soon after the operation.

RANZI.

**Marburg: Symptoms Due to Lesions of the Hypophysis** (Die Klinik der Zirbeldrüsenerkrankung). *Ergebn. d. inn. Med. u. Kinderh.*, 1913, x, 146.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The symptoms caused by lesions of the hypophysis may be divided thus: general pressure symptoms on the brain, local pressure symptoms on neighboring structures, and symptoms which are related to a lesion of the gland itself. The most constant symptom is headache. This headache is not uncommonly confined to the occipital region and is commonly associated with a stiff neck, opisthotonus, and changes in intensity when stooping. Vomiting occurs somewhat oftener than dizziness. The choked disk resulting from the increased intracranial pressure often occurs earlier on the right side than on the left. Other symptoms are loss of memory and intellect, somnolence, and tonic spasms. Locally the symptoms that are most characteristic are sluggishness or immobility of the pupils and weakness of vision in the upper and lower parts of the visual field. Later it may affect branches of the oculomotor or the trochlear nerve. There may also be a disturbance of hearing, which is usually bilateral, and eventually monoplegia of the extremities may occur due to lesions of the midbrain. An active degenerative process takes place in the cerebellum, which is accompanied by hydrocephalus and lesions of the corpus callosum. The real symptoms due to a lesion of the hypophysis itself are premature hypertrophy of the genitalia and general adiposity.

Tumors of the cerebellum and pons have to be considered when making a differential diagnosis. A diagnosis is often impossible when early genital development and adiposity are not found.

BIERNATH.

**Weber: Commotio Cerebri and Anatomical Findings** (Commotio cerebri mit anatomischen Befunden). *Aeratl. Sachverst. Zeig.*, 1913, xix, 56.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The patient was thrown from a motorcycle and fell upon his head. At first there were only symptoms of a slight concussion of the brain, but soon signs of serious affection of the brain appeared, death ensuing after 14 days. The autopsy revealed a fissured fracture at the base of the skull and injury of the dura mater. Macroscopically the brain seemed intact, but microscopically acute changes and chronic degenerative processes were discovered in the minute vessels. The author therefore concludes that many cases of commotio cerebri or affection of the brain end fatally, even though the traumatism has been of only medium severity, because a degenerative process, which previous to the accident had not become clinically evident, had already been present in the vessels.

RIEDEL.



## NECK

**Bauer: Wry Neck** (Der Schiefhals). *Ergebn. d. Chir. u. Orthop.*, 1913, v, 191.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The large bibliography which appears at the beginning of the article is proof of the interest which surgeons and orthopedists have in this disease. There is, however, no complete unanimity of opinion as to the etiology or the therapy; this article is a compilation and critical review of the views on this subject. The greater part of the article treats of muscular wry neck; the forms of the disease which are due to such cases as affections of the eyes and the ears, adenotomy, goiter, and tumors. The osseous, dermatogenous, desmogenous, and rheumatic forms are briefly discussed. The discussion of neurogenous wry neck is reserved for a special article.

On the question of etiology there are two views, which are based on clinical observations, pathologico-anatomical investigations, and experiments. One of these assumes a traumatic origin for the disease of wry neck, the other explains it as an intrauterine stigma. When the points for and against each of these views are weighed, it seems that the assumption of an intrauterine deformity in the great majority of cases will explain all the phenomena in a perfectly satisfactory manner, and is the more probable explanation. On account of the occasional occurrence of hæmatoma in the sterno-cleido-mastoid muscle, a traumatic origin cannot, however, be denied with respect to a limited number of cases; in a few cases an inflammatory origin would also come into question.

Since the purely orthopedic treatment will not suffice, the open operative method alone enters into question. Only a small number of authors advise cutting subcutaneously through the sterno-cleido-mastoid muscle. While the majority of surgeons carry out the bisection of the muscle at its sterno-clavicular origin, Lange recommends cutting through at the superior end. Mikulicz introduced extirpation of this muscle into therapeutic practice; since then various other methods of plastic operation on the origin of the sterno-cleido-mastoid muscle have been proposed. In the author's opinion, Mikulicz's method deserves to rank first, as it does not require prolonged after treatment and frequently produces permanent results.

BAISCH.

**White: A Clinical Lecture on Myxœdema.** *Lancet*, Lond., 1913, clxxiv, 154. By Surg., Gynec. & Obst.

The author reports three typical cases from the wards of Guy's Hospital. About half the cases of myxœdema occur between the ages of 30 and 50; over one third occur between 35 and 45. The normal weight of the thyroid gland is 30 gr.; it may in myxœdema sink down to 3 or 4 gr. He gives a very interesting account of the history of our knowledge of the disease. The most remarkable contribution to our knowledge of the subject was made by Sir

William Gull, in 1873. There is no evidence that parathyroids have anything to do with myxœdema. He discusses the pituitary gland in relation to myxœdema. Acromegaly is due to disease of the pituitary body. Out of 24 cases in which the thyroid gland was examined in persons who died from acromegaly, in only 5 was the thyroid gland normal. In 15 cases of disease of the pituitary, in which the thyroid was examined, there was some alteration in the gland. The anterior lobe of the pituitary body swells during pregnancy; when there is disease of the pituitary gland there is alteration in the thyroid body; there is alteration in the thyroid gland when the pituitary body is excised in animals; and when the thyroid gland is atrophied, as in myxœdema, there are changes in the pituitary body. Myxœdema is much more common in women than in men. Nearly all the women who have had myxœdema have borne children, often many children, and often in quick succession. The thyroid gland enlarges during menstruation and during pregnancy in many women. It would seem, therefore, that the disease must in some way have some sexual relation. The author takes up the value of thyroid treatment and the dangers of overdosing. He urges the importance of recognizing early cases.

DONALD C. BALFOUR.

**Wilson: The Relationship of the Clinical and Pathological Aspects of Exophthalmic Goiter.** *Northwest Med.*, 1913, v, 1. By Surg., Gynec. & Obst.

This paper is based on the co-ordinated clinical and pathological observation by H. S. Plummer and the writer of a large number of cases of exophthalmic goiter operated on in the Mayo clinic. It sets forth the reasons why (a) the clinician is able, from a detailed study of his cases before operation, to state the character and degree of change which will be found in the thyroid gland, and what effect may be expected from removing a portion thereof; and (b) the pathologist, from a study of the gland alone, is able to state broadly the clinical diagnosis of exophthalmic or simple goiter and the stage and severity of the disease.

This demonstration of the relationship of the symptoms and pathology of exophthalmic goiter by two men working independently has been made by each summarizing the results of his detailed study in accordance with the following working hypothesis:

1. Certain symptoms of exophthalmic goiter—symptoms of pressure on the trachea and adjacent vessels and nerves—are due to increase in size of the gland largely from its overfilled storage capacity.

2. Certain other symptoms of exophthalmic goiter, the acute toxic symptoms, seem due primarily to something made in the thyroid gland which passes into the general circulation and acts directly on distant vital organs.

3. Yet other symptoms of exophthalmic goiter are the secondary result of (a) degenerative changes produced in distant organs after their affection by



thyroid secretion, and (b) of the disturbance of the normal interrelations of these organs themselves.

A classification of the histological conditions met with in the thyroid gland is given, with a few examples of its general application as follows:

1. The thyroid gland removed from a young patient in the early months of acute thyrotoxicosis (exophthalmic goiter) shows hypertrophy and hyperplasia of the parenchyma, with a small amount of a thin and but slightly stainable secretion within the acini. The size of the gland and the distribution and degree of hyperplasia are proportionate to the intensity of the symptoms.

2. The thyroid gland from a young patient who has had acute thyrotoxicosis eight months to a year shows a much less active hyperplasia and a much larger amount of a more dense and more stainable secretion in the acini throughout the gland. This pathological picture corresponds to a period of reduction of the intensity of the toxic symptoms, which Plummer has pointed out usually occurs in the latter half of the first year of acute Graves' disease.

3. The thyroid gland in a young patient who has had acute Graves' disease for a year and a half or more usually shows at least three phases of pathologic change scattered irregularly throughout the gland as follows: (a) an active parenchymatous hyperplasia like that described in No. 1; (b) a reduced parenchymatous hyperplasia with a dense stainable secretion in the acini like that described in No. 2; and (c) areas in which the parenchyma cells are atrophied or desquamated from the walls of the acini, which are distended with intensely staining colloid.

4. The older the patient at the time of onset of acute thyrotoxicosis, the more quickly do colloid changes appear in the thyroid.

5. The thyroid from a patient who has somewhat rapidly developed a typical picture of exophthalmic goiter with exophthalmos, after years of simple goiter, presents a picture of advanced colloid change throughout most of the gland, but usually with *thinned* rather than with *desquamated* parenchyma, and with scattered areas of somewhat actively functioning parenchyma which may be markedly hyperplastic. It is sometimes impossible to distinguish this pathologic condition from that described in No. 3.

6. The thyroid gland from a patient who has had symptoms of thyrotoxicosis very slowly developing throughout a period of years, with a predominance of cardiac symptoms and little if any exophthalmos, is usually found to present a histologic picture of (a) diffuse adenomatosis or (b), more usually, of encapsulated multiple adenomata, almost invariably of the foetal type. These cases, however, as pointed out by Plummer, are not true exophthalmic goiter.

While the above general statements indicate broadly the lines of relationship which are usually found existing between the pathological and clinical conditions, the author urges the futility of attempting to co-ordinate the clinical and pathological find-

ings on any given case without making of it a special problem, to be studied in minute detail both by a skilled clinician and by an experienced pathologist.

**Meyer: Chronic Malignant Thyreoiditis, Peculiar Granuloma Consisting of Eosinophiles and Plasma Cells Originating in the Right Lobe of the Thyroid** (Eingenartis aus eosinophilen und Plasmazellen zusammengesetztes, vom rechten Schilddrüsenlappen ausgehendes Granulom). *Frankf. Ztschr. f. Pathol.*, 1913, xii, 116.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A case is described which clinically presented the picture of Riedel's "ironhard struma," which, in spite of a second operation because of asphyxia (Rehn), died from pressure of the tumor. Even after resection of the manubrium of the sternum a radical removal was impossible; a bilateral post-operative pneumothorax hastened the death. The autopsy showed that a tumor originating in the right side of the thyroid infiltrated the neighboring soft tissues and invaded the anterior mediastinum up to the pericardial sac, while the left lobe of the thyroid remained entirely normal. Histologically no malignant tumor was present. Instead was seen a granuloma tissue consisting principally of eosinophiles and plasma cells, which entirely replaced the thyroid tissue of the right lobe. There was a tendency to connective tissue formations; but no necrosis was found. The walls of the small vessels were thickened. In addition there was a circumscribed, small necrosis of the heart muscle. Bacteriologic cultures and examinations for Mushe's granuloma and animal experiments were negative. Tuberculosis and lues could be excluded (clinically K. I. treatment was of no avail). The healthy appearance of the patient, the histological picture, etc., spoke against a malignant granuloma. There was no generalized intoxication (Cachexie). The unaffected left lobe pointed against autointoxication by pathologic products of metabolism of the thyroid, and the great spread of the condition. The cause is probably to be found in an infection which could not be determined.

TOLKEN.

**Marine: Benign Epithelial Tumors of the Thyroid Gland.** *J. M. Research*, 1913, xxvii, 229.

By Surg., Gynec. & Obst.

The author's purpose in this paper has been to review the morphological characteristics of these tumors; to present his observations on the percentage iodine contents in relation to their anatomical structure; to offer a classification that embodies both the morphological and physiological data, and lastly, to discuss the possible bearing of these results on Cohnheim's hypothesis of tumor origin.

Approaching the subject from these angles the author has submitted the following scheme of classification. He has divided these tumors into four groups: 1. Hyperplasia from physiologically differentiated thyroid (simple or parenchymatous goitre). 2. Simple adenoma. 3. Intermediate adenoma. 4. Foetal adenoma. Each group he



subdivides thus: first, the growing phase; second, the involutionary phase; third, the colloid phase.

The relation of the percentage iodine contents to the anatomical structure and to the physiological phases of these tumors is given exhaustive study and his results may be briefly summarized as follows:

"There are all gradations between strictly non-tumor, simple parenchymatous overgrowths at one end and true foetal adenomas at the other end of the series.

"By comparing the percentage iodine contents of these tumors with their structure, a general relationship can be made out which is similar to that noted in the non-tumor overgrowths in that they have growing, involutionary, and colloid or resting phases.

"Neither the structure of the tumor nor its iodine content bear any essential relationship to the non-tumor tissue of the same gland save that these tumors are not seen apart from a general hypertrophy or hyperplasia, and therefore are not strictly independent growths. The most marked evidence of independence is seen in the foetal adenomata, and progressively lessens toward the non-tumor hyperplasias.

"Cohnheim's conception offers the best explanation of the origin of these tumors when one enlarges it to include the conception (1) that there are potential tumoranlagen formed at different physiological ages of the development of the main thyroid mass, and (2) that the stimulus for tumor growth is the same as for that of the thyroid as a whole. These growths may tentatively be considered as 'partial tumors.'" GEORGE E. BEILBY.

**Mori: The Appearance of Thyreotoxic Symptoms in Tumor Metastasis into the Thyroid** (Ueber das auftreten thyreotoxischer Symptome bei Geschwulstmetastasen in der Schilddrüse). *Frankf. Ztschr. f. Pathol.*, 1913, xii, 2.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the cause of Basedow's symptoms of disease in primary malignant tumors of the thyroid and in thyreoiditis. The explanation is that the tumor growth changes the products of secretion (dysthyreosis) or the primary proliferation causes an irritation which finally leads to malignant degeneration. That secondary metastatic tumors growing in the thyroid can give pronounced clinical symptoms of a Basedow is shown by three cases which are reported at length.

1. *Sarcoma of the pelvis* (Hirschfeld, *Zentralbl. f. Nervenheilk.*, 1906). A secondary typical Basedow resulted. Aside from other metastasis there were three nodules the size of a cherry stone in the thyroid, which itself was not enlarged. 2. *Melanosarcoma of the eye*. There had been an enucleation 15 years previous. Five months before death a metastatic sarcomatosis developed. There was a struma. The pulse was accelerated. Autopsy showed generalized metastasis. The thymus was replaced by a tumor. 3. *Carcinoma of the breast*. The pulse was increased. There was a struma with hyperhydrosis

and exophthalmos. Autopsy showed large nodules in the thyroid.

Histologic examination of the involved thyroid showed a simple colloid tissue. The follicles, however, were compressed by tumor or proliferated connective tissue and were flattened out. They were filled with colloid which was scarcely stainable. The characteristic changes in Basedow of a papillary proliferation with high epithelial cells was wanting. On the other hand there was a rich new formation of vessels. The author believes that the altered secretions of the follicles compressed by metastasis were introduced into the circulation in larger quantities and therefore produced thyrotoxic symptoms. HOTZ.

**Bircher: The Etiology of Endemic Goiter** (Die Aetiologie des endemischen Kropfes). *Ergebn. d. Chir. u. Orth.*, 1913, v, 133.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author has made a comprehensive review of the literature and a systematic review of the various theories as to the etiology of goiter. The chapters from Bircher's pen on the connection of goiter with the soil and drinking water are of especial interest. Bircher's demonstration of the occurrence of goiter, especially over marine deposits, while eruptive formations, chalk and sweet water formations in general are free, has been confirmed by newer works (Lobenhoffer and others) but has also been opposed by others (Weichardt and Schittenhelm, Hesse). Bircher demands detailed investigations in connection with exact geologic considerations. He brings new examples of the influence of drinking water. A village was infected with goiter to a high degree by a water supply from "Muschelkalk." He reports attempts to produce goiter in animals by feeding with "Kropfwasser." Bacteriological findings, effect of inorganic and organic components of the water, colloid, radioactive substances, observations of familial goiter in the progeny not growing up in goiter districts, are reported. Pregnancy and other incidental causes are briefly discussed. At the conclusion the theories concerning "goiter heart" are discussed. Bircher found hypertrophy and degenerative phenomena in his rats. Strumectomized dogs show an increased pulse rate after drinking "Kropfwasser." An unfavorable effect on the cardiac activity was also noticed in operated "goiter hearts" after returning to the source of the goiter. The goiter heart is an independent disease picture and included in the conception of cretinic degeneration as a direct consequence of the strumigenose toxins present in the drinking water. HOLTZ.

**Crile: Present-Day Conceptions of the Pathologic Physiology of Graves' Disease from the Surgeon's Viewpoint.** *Cleveland M. J.*, 1913, xii, 15.

By Surg., Gynec. & Obst.

The author has drawn his conclusions from 254 cases of exophthalmic goiter. At first, hyperthyroidism following operation was supposed to have



been due to the absorption of the thyroid secretion from the cut area. This was disproved by cauterization of the raw surface and also by packing the wide opening with dry gauze.

Having observed hyperthyroidism to follow fright alone, this factor was excluded by appropriate technique whereby he was able to steal the gland without the patient's knowledge. This reduced the hyperthyroidism 50 per cent.

Furthermore, having seen hyperthyroidism and even death following a fracture in an exophthalmic goiter patient, he next hit on the general theory that part of the hyperthyroidism was due to traumatic stimuli. In Graves' disease there is a low threshold in the brain to all stimuli. Moreover, they have a minimum amount of reserve nervous force. Working along the general hypothesis of the pathologic physiology of surgical shock—namely, that shock was due to driving the motor mechanism of man, leading to the activity of the brain cells and consequent nervous exhaustion—he hit upon the plan of excluding all traumatic impulses from reaching the brain at the time of operation and for several days following by blocking the entire operative field with novocain and quinine and urea hydrochloride. Thus he was able to protect the brain, with its low reserve force of nervous energy, from the stimuli arising from both psychic factors and trauma. This last stage was reached in his 240th operation. By these procedures hyperthyroidism was practically banished.

Every patient had a distinct thyroid enlargement by reason of either hypertrophy, hyperplasia or tumor. After the operation, in every case, within the first day or two the patients experienced subjective relief from nervousness. Lack of mental worry during the convalescence gave a much more brilliant result than when this was present.

The same technique that prevents the so-called hyperthyroidism also prevents the so-called aseptic wound fever of the thyroid patients. Hyperthyroidism is a general disturbance of metabolism, calling forth an increased output of energy. By the above technique, the brain being protected from all such stimuli reaching it, no hyperthyroidism followed.

When the disease was of long standing and in patients of poor physical structure, results were correspondingly less brilliant. The improvement continued from six months to two years. The ultimate outcome of the patients depended largely on the environment and medical direction during the year following operation. The general surgical viewpoint is as follows:

Every patient should be first given real physical and psychic rest. If not relieved within two months, an early surgical operation will relieve or cure. If the operation is done early, the result is almost certain. If late, the results depend on the amount of damage already done to the central nervous system and the glandular structures in the body.

**Crile: The Kinetic Theory of Graves' Disease.**  
*Am. J. M. Sc.*, 1913, cxlv, 28.

By Surg., Gynec. & Obst.

Crile discusses the theories of the manner of production of Graves' disease and compares the clinical picture presented to that produced by the emotions, especially fear. He shows that the patient suffering with Graves' disease presents a picture identical in many particulars with that of a person under the influence of great fear. Crile states that fear is a means of preparation for self-defense, either by fight or flight, and that all of the organs are affected—those which are to be actively engaged in the struggle (skeletal muscles, heart, respiratory organs, etc.) are stimulated, while the useless functions are inhibited (digestive, procreative, etc.). Almost exactly the same thing happens in hyperthyroidism.

This line of reasoning, Crile thinks, explains the etiological connection in cases of Graves' disease, which are known to come on after mental strain, worry, shock, etc.—all varieties of fear.

Graves' disease is a disease of the motor mechanism which may be induced by overstimulation of the nervous system, which in turn causes an overproduction of thyroid secretion. Thyroid secretion in turn is an excitant to the nervous system, and thus a vicious circle is established.

Mental and physical rest will frequently break the vicious circle, and to this is due the cures obtained by rest in bed. Were it possible to put the brain at absolute rest—for it to hibernate—a large percentage of the cases of Graves' disease could be cured by this means alone. JAMES F. CHURCHILL.

**Grober: Spontaneous Cure of Basedow's Disease**  
(Ueber Selbstheilung von Basedowscher Krankheit).  
*München. med. Wochenschr.*, 1913, lx, 8.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports a case which was observed from 1906 to 1912. The symptoms of Basedow were very pronounced at first, and decreased each year without treatment, so that objective findings were scarcely demonstrable. The subjective complaints had entirely disappeared. At the same time that the Basedow disappeared there developed an affection of the lung which was probably tuberculous. The author thinks that the symptoms of Basedow were overcome by the appearance of chemically active substances from the lung disease. The author does not attempt to decide whether it is the tuberculin which, according to the French, is the active agent since they regard Basedow's disease as a form of tuberculosis. The products produced probably compensated the harmful products of the thyroid and so caused an improvement of the condition. LOBENHOFFER.

**Brown: Conservative Treatment of Tuberculous Glands of the Neck, Based upon Their Pathology.** *Med. Rec.*, 1913, lxxxiii, 12.

By Surg., Gynec. & Obst.

For the past four years the writer has been treating tuberculous cervical adenitis in accord with



a better understanding of living pathology, and applying this knowledge along the lines of physiological surgery rather than what are termed radical methods. The success attained from these more conservative methods points to a sound basis in pathology.

Pathological studies demonstrate, as we should expect on anatomical grounds, that infection of the glands through the blood stream may occur, aside from miliary septicæmia. In a chart of clinical and pathological data, an attempt was made to differentiate by histological picture the hæmatogenous and lymphogenous infections. While in practically every case of scrofula, lesions were found in the marginal sinus and at the periphery of the follicle (probable in the sinus wall), occasionally others lay in the heart of the follicle or but slightly excentric. One fact of paramount importance presents itself, namely, that these patients are suffering not with a local disease, but with a general systemic infection which at this time is held in check by a good resistance.

We first observed this several years ago while doing the block dissection. At that time we were removing, in all cases, the glands and gland-bearing fascia, and yet we always found minute glands following along the vein, so deeply placed that complete removal was impossible. These small pin-head glands were thought to be merely toxic, but on section many were found to be tuberculous. However, in these cases healing occurred by primary union, and the patients are alive and well to-day.

It was customary at that time to treat all small single glands, whether with or without sister glands, first, by removal of the portals of infection (tonsils, adenoids, etc.), and secondly, by simple incision into the suppurating foci. This latter procedure led into many difficulties, since a second infection was often added. It is readily seen that incision into an abscess cavity opens new atriæ for infection and that the tissues, in their fight to prevent further bodily involvement can no longer carry on the war so magnificently waged before incision.

In order to produce local œdema and cell proliferation, the author produces a Bier hyperæmia by a simple elastic band about the neck for a few hours before operation. Then a very small straight incision is made into the gland, and the contents are evacuated by a dull spoon, using no force or rough manipulation, and being careful not to break through the capsule nor to invade the protective phagedenic zone; and without washing or wiping out the cavity, 2 to 4 per cent formalin in glycerin is introduced and the incision sealed.

Primary healing occurs in 50 per cent of the cases. Of the remaining 50 per cent, 30 per cent have only a serous discharge, which ceases after three or four more injections; and the remaining 20 per cent suppurate, more or less, depending on the delicacy and completeness of the technique.

At the same time this local treatment was started we began a more systematic attempt to increase the

general resistance of the patient—forced feedings, 24 hours a day out of doors, and other methods of treatment which were recognized as applicable and beneficial in all cases of tuberculosis. The treatment of these simple cases was so successful that we applied our methods to more extensive gland involvement.

The injection of tuberculin B had little or no effect; but the enzymes of yeast seemed to be the connecting link needed in the treatment. It has been applied in more than 85 cases. Fifteen of these cases were treated until we became satisfied that some more radical method was indicated to start the process of body repair.

Of the other 70 cases, 56 are well without gland involvement; 10 are recent cases under treatment; three were lost sight of after the first treatment; and an infant with both cervical lymph-chains involved died with some intercurrent summer diarrhœa while away from home.

“Radical operation” for cervical glands is a misnomer. No operation for this disease can be radical, since the glands are so numerous that complete removal is impossible. The most we can do is to remove the lymphatic chain involved, with its infected outlying glands and gland-bearing fascia.

**Streissler: Cervical Ribs** (Die Halsrippen). *Ergebn. d. Chir. u. Orthop.*, 1913, v, 280.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

There is not complete unanimity of opinion among anatomists as to the degree of development and type of origin which should determine the applicability of the term “cervical ribs.” Though in principle these cervical ribs are traced to disturbances in the development of the germ plasma, we remain quite in the dark as to their final causes. The author defines a “cervical rib” as any formation in the place of the processus costarius of the first to seventh cervical vertebræ—usually the seventh—which is joined to the vertebræ synostotically or by an articulation which exceeds in size a normal transverse process, and which may extend into the soft parts of the neck and even reach the sternum, like a common rib.

He gives a general description of the different varieties of cervical ribs and a detailed description of their parts, supplemented by photographs and skiagrams. He also discusses their relations to adjacent tissues and organs, the musculature of the neck, the nerves, and the pleura. He finds that disturbances, as aneurisms and thromboses, may result from compression of the arteries. Neuritis and disturbances of sensibility and motility of the plexus, especially in the region of the first dorsal and the eighth cervical vertebræ, also occur. More remote signs of pressure may appear in the area of the sympathetic nerve, in the eye, the heart, and the thyroid gland. Pressure on the phrenic nerve will cause diaphragmatic cramps. A striking fact is the frequent association of tuberculosis of the apex of the lung with cervical ribs. This is to be explained by the confinement and deficient ventilation of the



lungs, in the sense of Freund's theory. The connection of cervical ribs with scoliosis is still a matter of dispute. Garré, in assuming this connection, regards it as a scoliosis with very high localization and uncommon rigidity, in which convexity in accommodation to the direction of the cervical ribs is frequently associated with compensatory scoliosis at the border line of the chest and the lumbar vertebrae. Garré explains this form of scoliosis by the influence of mechanical factors, while according to Streissler it is simply a subspecies of congenital scoliosis and its etiological association with cervical ribs is purely accidental. As such, a cervical rib need not necessarily cause disturbances of any kind; but such disturbances may be caused by the growth of the rib during adolescence. Involution of the adipose tissues may take place in old age or after severe illness and not uncommonly results from

trauma. Periostitis, curvatures, and fractures may cause pains by pressure on the surrounding muscles. For these reasons this congenital anomaly should by no means be neglected. It calls for therapeutic measures, among which operative intervention deserves preference over the conservative methods. Resection of the rib by the anterior route is by far the most frequent form of the operation, while Streissler employs the posterior.

No deaths have been observed in these operations. In 77 per cent of the cases the complaints were removed and in that sense cure obtained; 13 per cent resulted in improvement, while 10 per cent were failures. It must not be expected, however, that the complaints will cease immediately after the operation; their disappearance after two weeks to two months must even be considered a rapid cure.

COSTE.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Hadda: Total Congenital Rib Defect** (Der totale angeborene Rippendefekt). *Ztschr. f. orth. Chir.*, 1913, xxxi, 176.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Hadda has gathered 20 cases of total congenital rib defect from the literature and adds 3 cases of his own observation. Unlike a partial defect, the total defect of a rib is a relatively rare finding and may be easily overlooked. It occurs frequently with other developmental defects, especially a high standing scapula and malformations of the vertebral column. The associated spinal curvature brings the patient to the physician. According to the author these anomalies will be less easily overlooked, if every case of scoliosis is examined with the Röntgen rays over the entire thorax.

VON FRISCH.

**Basch: Contributions to the Physiology and Pathology of the Thymus; the Relationship of the Thymus to the Thyroid** (Beiträge zur Physiologie und Pathologie der Thymus; die Beziehung der Thymus zur Schilddrüse). *Ztschr. f. exp. Pathol. u. Therap.*, 1913, xxii, 180.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author studies the disturbances of the growing bones and of the nervous system after experimental extirpation of the thymus and thyroid. The effect of the thymus on the growth of the skeleton is a limited one. After the atrophy of the thymus, the thyroid induces the development of the bones. Electrical hyperirritability in the peripheral nerves develops gradually after resection of the thymus and promptly after excision of the thyroid. The functional parallelism of the thymus and thyroid is seen further according to the experiments of Basch in the similar effect on the action of the pupils following thymectomy and thyroidectomy. Mydriasis after

application of adrenalin appears in a thymectomized dog after two or three weeks; after excision of the thyroid in a few hours. It is probably the diminution of the lime salts in the tissue fluids which produces the increase in irritability of the oculomotor nerve and the sympathetic. The function of the excised thyroids cannot be taken up by an increased function of the thymus. The appearance of tetany is only delayed. A decrease in the size of the thyroid results in a loss of weight of the thymus, and vice versa, a large thyroid is accompanied by a large thymus. The Basedow thymus is an expression of the functional synergie of both organs, and is dependent secondarily upon the appearance of symptoms of a disease of the thyroid.

KLOSE.

**D'Auria: A New Contribution to the Radical Cure of Exudative Pleuritis** (Nuovo contributo sulla cura radicale delle pleuriti essudative). *Giorn. internaz. d. scienze med.*, 1913, XXXV, 22.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

D'Auria employs the following method of treatment for extensive pleuritic extravasation. Using Potain's apparatus and making the puncture in the seventh intercostal space on the left side and in the eighth on the right side, he slowly drains off the exudate; he then rinses the pleural cavity with an iodine solution, using the same apparatus. He describes the solution as iodine in sterilized solution. For serous exudations he employs a 20 per cent solution and one of 30 to 50 per cent for purulent exudations. The solution is left in the thoracic cavity 5 to 10 minutes and is then removed by means of an aspirator. In serous exudation he has obtained good and rapid results — even in one case of primary tuberculous inflammation of the pleura. In cases of purulent exudation good results could be obtained only where the purulent stage had just begun; otherwise resection of the rib and



opening of the pleura became necessary. The iodine solution, in this case, has an effect similar to that obtained in puncture for hydrocele with subsequent injections of iodine—that is, it causes inflammation. As a result of this inflammation adhesions are formed, and thus the further accumulation of fluid is prevented. In the author's opinion a considerable influence is also to be ascribed to the bactericide action of iodine.

HERHOLD.

**Höniger: Tracheostenosis Thymica** (Ueber die Tracheostenosis thymica). *Beitr. z. klin. Chir.*, 1913, lxxxii, 484.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Höniger contributes an interesting case of tracheostenosis thymica. A girl, 4 months of age, suffered from attacks of dyspnoea which at first were relieved by intubation, but later necessitated the resection of a piece of thymus. The skiagraph did not present an enlarged shadow of the thymus, nor was the thymus visible in the judulum at expiration.

However, as the operation resulted in recovery, and as the thymus was even microscopically normal, Höniger discusses the possibilities of pressure by an apparently unenlarged thymus. Either the thymus had already exerted a deleterious influence on the structure of the trachea during the intrauterine period, or increased secretion caused a temporary swelling of the organ. The author recommends intubation as a first measure in such cases.

KLOSE.

## TRACHEA AND LUNGS

**Sehrt: Tracheotomy of Urgency with Special Consideration of the Complications in Goiter** (Die dringliche Kriko-Beziehungsweise Tracheotomie, mit besonderer Berücksichtigung der Kropfkomplikationen). *Med. Klin.*, 1913, ix, 132.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Sehrt reports a method of tracheotomy in cases of goiter and enlargements of the isthmus of the thyroid which causes only a slight wound in the larynx and which can be rapidly and safely executed.

The head of the patient, who may be lying down or sitting, is bent back as far as possible. A distensible hooked cartilage forceps is then forced with firm pressure into the center of the thyroid cartilage near where its lower border can be felt, and pressed as deeply as possible into the angle which is formed by the two plates of cartilage. While the left hand now gradually and firmly draws the forceps toward the chin, thus bringing the trachea out from behind the struma, the direction taken by the trachea should be noted. A knife is then inserted  $\frac{1}{2}$  cm. below the point where the hooks of the forceps have fastened into the skin and with firm pressure is forced vertically downward, always holding exactly to the median line of the thyroid cartilage. If the cartilage is resistant because of its calcification, one must gradually, millimeter by millimeter, feel his way downward with the knife, until it pierces the trachea.

By this procedure serious accidental injuries are excluded. After cutting the trachea the incision is extended in an upward direction and the prongs of the forceps are distended to permit the insertion of a cannula. In case of calcification of the cricoid cartilage it will not be possible to distend the forceps; in that case the opening must be enlarged by a transverse incision; the cannula is then inserted along the blade of the knife. The wound can now be readily extended and dressed. So far the author has not tried his method upon the living subject.

JUNSEN.

**Behrenroth: Echinococcus of the Lungs** (Der Lungenechinokokkus). *Ergeb. d. inn. Med. u. Kinderheilk.*, 1913, x, 499.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Consideration of etiology, pathogenesis and pathological anatomy. In the symptomatology the fact is brought out that most patients with pulmonary echinococcus are held to be tuberculous until the characteristic elements in the expectoration leave no more room for doubt. In spontaneous perforation and even in single puncture an urticaria or an eruption simulating urticaria is observed, at times also threatening symptoms, dyspnoea singultus, etc., which are to be regarded as anaphylactic. For this reason the indications for puncture are limited. Explanation of the anaphylaxis. In the chapter on serology the precipitin reaction and the complement fixation method are considered.

The precipitin reaction is carried out as follows: To 12 drops of serum 1 cc. hydatid fluid is added and allowed to stand 24 hours at room temperature. In human beings only 75 per cent are positive. In rare cases, even with absence of the echinococcus, it may be weakly positive. Only a positive reaction is of value.

The complement fixation method is a specific reaction. The hydatid fluid must be obtained from sheep. Their antigen is in the highest degree specific. According to Henius the cyst contents act as antigen at least half a year. The hydatid fluid and watery and alcoholic extracts of the cyst wall may give a positive reaction with the serum of tape-worm carriers. Hence with a positive serum reaction for echinococcus we must also think of the presence of a tænia.

HOFFMANN.

**Kellock: A Case of Pneumonotomy for Foreign Body.** *Lancet*, Lond., 1913, clxxxiv, 92.

By Surg., Gynec. & Obst.

The author reports the case of a boy  $4\frac{1}{2}$  years old who four days previously had swallowed a shawl pin about 2 inches long. A skiagram showed the shadow of a pin at the level of the third rib on the right side, apparently in the right bronchus, with the point upwards. The day after admission an effort was made to remove the pin through a bronchoscope. On June 12, a low tracheotomy was



performed and an endeavor made to remove the pin through the wound and also through the larynx; on the 15th and also on the 19th this was again attempted but without success. On June 24, under an anæsthetic and with the aid of a fluorescent screen, the author made an attempt through the tracheotomy wound, to remove the pin by means of instruments made out of gum-elastic catheters. At this time the pin was lying almost vertically with head apparently about three-quarters of an inch above the diaphragmatic surface of the right lung. On July 3, an open operation was performed. A square flap consisting of skin and superficial muscles, measuring about 4 inches in width and depth, was reflected backwards, the edges of the flap being parallel to the direction of the ribs and the posterior ends of the upper and lower incisions reaching to within about an inch of the middle line of the back. The flap, consisting of ribs, intercostal muscles, and pleura, was turned completely backwards on the hinge formed by the posterior section of the ribs. A window about 3 inches square was thus made into the pleural cavity.

Two fingers of the left hand were passed into the sulcus between the middle and lower lobes of the lung and the lower lobe pulled outwards and steadied. Directly this was done the tip of the finger of the right hand in the wound in the lung felt the head of the pin, and it was easily extracted with sinus forceps. It was found to be a steel pin  $1\frac{1}{2}$  inches in length, with a glass head about one-eighth of an inch in diameter. The child made a rapid recovery after a few days.

DONALD C. BALFOUR.

**Baer: Contribution to the Surgery of Lung Cavities** (Beitrag zur Kavernenchirurgie). *Berl. klin. Wchnschr.*, 1913, I, 107.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The slight chances of a spontaneous cure of large tuberculous cavities, as well as the long duration of such cures, justify surgical procedures. The ideal method is pneumothorax; but this fails if there are pleuritic adhesions. For such cases, the methods of extrapleural thoracoplastic surgery come into question. As large cavities in the apex of the lung cannot be made to collapse either by pneumothorax or thoracoplastic surgery (which is contradicted by Sauerbruch's observations; cf. Sauerbruch u. Elving; "Die extrapleurale Thorakoplastik"), the author has devised another method. This consists in resecting a number of ribs above the cavity and subcostally loosening the parietal pleura, thus giving the cavity a chance to collapse. The cavity left after the lung has collapsed is filled with a paraffin plug, which serves the further purpose of insuring permanence of the collapse.

After experiments on animals and dead bodies, the author employed his method in the case of a young man 23 years of age who presented a large cavity in the right superior lobe. A thoracoplastic operation after the method of Wilms not having

brought the desired result, an attempt was made, after resection of the ribs, to cause collapse by the extrapleural thoracoplastic operation. This attempt was successful. A fistula formed, however, as a result of necrosis of part of the wall of the cavity. At a third operation, this fistula was enlarged by means of thermocautery. The cavity was drained for a time and showed marked tendencies to collapse, its walls becoming normal as fresh granulations were formed. The tubercle bacilli disappeared from the sputum and the general condition improved. Further treatment should consist in change of dressings and tamponment of the exterior cavity at gradually prolonged intervals, and light and Röntgen ray illumination. If it is possible to produce proliferation, the cavity should be filled by a plastic operation and the outer wound sutured if necessary.

The condition of the patient subsequently was much improved: the bronchial fistula has closed, the test for tubercular bacilli remained negative, and the patient looked well and was gaining in weight. To anticipate criticism, the author considers the advantages of his method. These are, that in suitable cases extrapleural pneumolysis with secondary plastic closure of the cavity promises good results; opening of the cavity comes into question as a supplemental factor. JEHN.

**Meyer: Artificial Breathing** (Ueber künstliche Atmung). *Ztschr. f. ärztl. Fortbild.*, 1913, x, 11.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Artificial respiration can be effected (1) manually, (2) with apparatus, (3) combined, after stopping of respiration from (1) mechanical obstructions of respiration, (2) poisoning. As the most ideal, that method should be employed which approximates the condition of maximal inspiration and maximal expiration. A purely inspiratory procedure is the method of Marshall-Hall by rolling. Expiratory is the method of Howard by compression of the lower thorax in dorsal position, Schäfer's compression of the lumbar region in abdominal position, and Boland's by pulling both shoulders upward in the same position. Silvester has a combined method. All procedures in abdominal position are unwarranted. Loewy-Meyer obtained 2000 to 3000 cc. air ventilation of the lungs by a modified Silvester method. After the mouth has been cleansed and the tongue tied to the chin, the arms of the patient, who is placed on the ground with the shoulders somewhat lifted, are seized above the elbow and pressed to the ground behind the patient's head; then the grasp is changed and the arms brought forward to the middle of the chest and pressed backward and upward, six to eight times in a minute. Oxygen apparatus are important in diseases of the respiratory and circulatory organs and change of hæmoglobin from poison. The oxygen apparatus are effective only with simultaneous ventilation of the lungs; atmospheric air must always pass besides the oxygen. WETZEL.



## HEART AND VASCULAR SYSTEM

**Lucas: Surgery of the Heart** (Zur Herzchirurgie). *Deutsche med. Wchnschr.*, 1913, xxxix, 166.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports two successfully operated cases of severe stab and gunshot wounds of the heart. Both cases presented the picture of heart tamponade. The bared heart showed no pulsation, but only a few single fibrillary twitches. In the first case the anterior wall of the left ventricle showed a perforating wound, while in the second case both ventricles were shot through. On the basis of the experience gained from these two cases, the author recommends the baring of the heart through the area uncovered, since this furnishes an excellent entrance, and an injury to the pleura, in case such does not yet exist, may be avoided. This is especially important in those cases where a pressure apparatus is not handy. Drainage of the heart sac is strongly recommended. In both cases direct massage of the heart proved to be an excellent means for reviving. The conservative method recently advocated for diagnosed or supposed heart injuries is not recommended by the author. He rather favors operation, even in injuries of the pericardium, because of his observations of similar cases where no operation was undertaken and in which the results were fatal.

HÄCKER.

**Dunn and Summers: Observations on a Case of Mediastinopericarditis Treated by Cardiolysis.** *Am. J. M. Sc.*, 1913, cxlv, 74.

By Surg., Gynec. & Obst.

Patient was a man aged 29, whose previous history was negative except for diphtheria in childhood. History of present trouble dated back three years.

Typical signs of adhesive mediastinopericarditis with marked cardiac hypertrophy and broken compensation. Compensation regained in three weeks. Ten days later Summers resected the sternal ends and costal cartilages of the left third, fourth, fifth and sixth ribs flush with the sternum, through a U-shaped musculo-cutaneous flap. The exposed area of pericardium and pleura measured  $5 \times 4\frac{1}{2}$  inches. Recovery, both immediate and remote, was satisfactory.

The authors discuss the varieties and mechanism of adhesive pericarditis.

JAMES F. CHURCHILL.

## PHARYNX AND OESOPHAGUS

**Lewisohn: A New Principle in Oesophagoscopy and Gastroscopy.** *Ann. Surg.*, Phila., 1913, lvii, 28.

By Surg., Gynec. & Obst.

The unpopularity of the straight oesophagoscopes is due to the fact that they do not adapt themselves to the right angle normally existing between the mouth and oesophagus. In using them it is necessary to adapt the patients to the instrument by forcibly overextending the head. A satisfactory oesophagoscope must fulfil the following three main requirements:

1. The introduction must be possible in the normal position of the head.

2. The instrument must be so constructed that it actually passes into the longitudinal axis of the oesophagus and not at an angle to this axis.

3. The oesophagoscope should be passed downward along the oesophagus under the guidance of the eye to avoid perforations.

Based on these main considerations, the author has devised a telescopic instrument which represents a new principle in the construction of oesophagoscopes and gastroscopes, and may even be applied to bronchoscopes. The instrument consists of two portions — the horizontal part, which lies in the mouth of the patient during the examination, and the vertical portion, composed of a telescope of six separate tubes. This latter can be pushed down into the oesophagus as far as necessary by means of a spring. Attached to the lower part of the upper tube of the telescope are two metal guides, which act as an obturator and materially facilitate the introduction of the instrument into the upper part of the oesophagus.

The examination of the patient can be divided into two stages: 1. The "anchoring" of the instrument in the upper part of the oesophagus. This occurs automatically by means of the metal guides. 2. The passage of the oesophagoscope into the deeper parts of the oesophagus under the guidance of the eye of the examiner.

During the entire examination the patient sits on a chair, holding the head in normal position. When the examination is finished the spring is gently pulled until the telescope is again closed. The closed instrument is then withdrawn from the mouth.

The advantages of this right-angular telescope, as compared with the straight tube, are marked. The most obvious is the fact that the patient is not put into any strained position, but the head is held naturally during the entire examination.

The author discusses the importance of oesophagoscopy for the early diagnosis of cancer of the oesophagus and for the differential diagnosis between oesophageal and mediastinal growths.

A report of the clinical results obtained with the aid of this new instrument gives the data of ten cases, mostly carcinoma of the oesophagus. The pictures obtained during these examinations are given in a colored plate.

In conclusion, the author refers to his experiences with a gastroscope constructed on the same principle.

**Frangenheim: Oesophagoplastic Surgery** (Oesophagoplastik). *Ergebn. d. Chir. u. Orthop.*, 1913, v, 406.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author enumerates the various methods of partial oesophagoplastic surgery of the cervical portion of the oesophagus (the methods of von Hacker, Poulsen, Rokitzky, and others), and demands that gastrostomy should precede every oesophagoplastic operation. The formation of the oesophageal tube, in partial oesophagoplastic operations, may



be unilateral or bilateral. The chief sutures may be most efficiently covered by employing flaps, with the pedicle either above or below.

The following methods of total œsophagoplastic operation are then described: Bircher's formation of a cutaneous tube from the skin of the chest; Wüllstein's employment of the small intestine and the skin of the chest in animal experiments; Roux's œsophagojejuno-gastrostomosis; the combination of Roux's and Wüllstein's methods by Lexer; the plastic formation of an œsophagus from the wall of the stomach by Hirsch and by the different method of Jianu; and finally, the employment of the transverse colon by Kelling and Vulliet. Roux's procedure almost always resulted in gangrene of the intestinal flexure which had been shunted and brought out into the wound. The cause for this is to be found not only in compression of vessels and torsion of the pedicle, but also in alterations in the vessels (arteriosclerosis). As the chief objection to the methods of Hirsch and Jianu the author cites the fact that in patients suffering from stenosis of the œsophagus,

the stomach is almost always markedly contracted. From such a stomach it would not be possible to resect more than a very small flap, hardly extensive enough to reach as far as the xyphoid cartilage. The skin of the chest lends itself very well to covering defects in the œsophagus. Cutaneous tubes of even 30 cm. in length will be kept sufficiently nourished.

In total œsophagoplastic operations, if the œsophagus is cut through transversely at the throat and if there are impermeable strictures, the aboral end of the œsophagus must be brought out into the wound in the form of a fistula, or extirpated, in order to prevent any stagnation of mucous secretion or food in the neck. If the œsophagus is not completely cut and there is complete stenosis, the accumulated secretion will find an outlet upward and thence pass into the artificial œsophagus. Observations and deglutition tests on human subjects having an artificial œsophagus have demonstrated the functional sufficiency of the new œsophagus. The passage of food is somewhat slower than under normal conditions. BOIT.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Schepelmann: Experiments in Treatment of Peritonitis** (Versuche zur Peritonitisbehandlung). *Med. Klin.*, 1913, ix, 102.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Experiments on 86 rabbits showed that treatment of the peritoneum with lime water because of its bactericidal powers and its effect as a capillary constrictor, is beneficial, but practically does not influence the course of peritonitis. Homologous animal blood does not influence pus formation, but also has no therapeutic value in the prophylaxis or treatment of peritonitis. Injection of heterogenous animal blood is even injurious. The formation of adhesions, however, is increased by injection of either homologous or heterogenous blood. ISELIN.

**Herff: The Prevention of Post-Operative Peritonitis in Cases of Contaminated Laparotomy** (Zur Vorbeugung postoperativer Peritonitis bei verschmutzten Laparotomen). *Gynäk. Rundschau*, 1913, vii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From 1901 to 1912 Herff had 163 deaths, of which 53 were due to peritonitis. During the first four years he had 3 cases of peritonitis migrans after "clean operations," but this class has disappeared since increased wound protection has been introduced. In unclean cases the author makes use of two methods of prevention: 1. Camphor lubrication (20 to 50 cc. of a 1 per cent solution of camphorated oil) during and after laparotomies which are unclean or in which he has opened an abdominal viscus. This caused a decrease of the vomiting, but did not prevent secondary peritonitis. 2 Hydro-

gen peroxide (especially Merck's perhydrol diluted 1:2 with water) is used to insure asepsis of the wound. In abdominal hysterectomy, for instance, after the uterus is removed and the pelvis cleaned out, using drainage through the vagina, the cut edges of the peritoneum are clamped and the pelvic wound bathed in 20 to 30 cc. of the diluted perhydrol. After the edges become visible through the foaming caused by the perhydrol, the wound is covered with peritoneum and 10 cc. of perhydrol poured on before closing the abdomen. In closing the wound in the abdominal wall the muscle, fascia and suture material are repeatedly washed with the perhydrol solution. With this procedure the author has had excellent results in the healing of wounds, favorable pulse rate and temperature. In regard to the formation of adhesions following the use of perhydrol, Herff is performing some experiments along that line, the results of which are not ready. BAYER.

**McGavin: The Results of Filigree Implantation.** *Proc. Roy. Soc. M.*, 1912, vi, 103.

By Surg., Gynec. & Obst.

The following assumptions are made by the author: (1) That Bassini's operation for inguinal hernia is an excellent method and can be applied successfully to most cases in young adults. (2) That when recurrence takes place, a cure by this method is highly problematical. (3) That in the event of failure, such further attempt, by increasing the amount of stretched cicatrix, distinctly increases the prospect of recurrence. (4) That the application of a truss is a confession of failure, a disappointment to the patient, and very often the cause of the



enlargement of the hernial ring. (5) That ventral hernias in the stout and elderly are uncontrollable by any form of retention apparatus, because the apparatus cannot prevent the spread of the hernia laterally in the deeper planes of the abdominal wall.

Since the introduction of filigree transplantation, 314 hernias of all kinds, excepting femoral hernia, have been operated upon by the author. Of these 263 were inguinal and 51 were umbilical or ventral. Of the inguinal cases 106 were treated by filigree implantation, and of the umbilico-ventral 40; adding to these 20 cases of inguinal transplantation done on both sides, the total number of implantations of all varieties is 166.

Of the inguinal hernias, all but six were in men, many of whom were engaged in the hardest manual labor, viz., stoking. Of the 51 umbilical and ventral hernias, only 15 were in men and 36 in women, many of the latter being enormously stout. Many of the patients had repeatedly been operated upon ineffectually. Since advanced age is considered as compromising a successful result, it is interesting to note the ages of the patients. Of the 146 cases of implantation, 11 were over 60 years of age, 27 were between 50 and 60, 48 were between 40 and 50, the remainder being under the age of 40.

The cases were dealt with by implantation for one or more of the following reasons: either they were of large size, of long standing, in elderly subjects, were affected by the atrophy of truss pressure, exhibited a wide hernial gap, or they occurred in men whose work was unusually heavy.

Of all these cases only two suffered a recurrence. Both were of the inguinal variety. The first was one of the early cases, which suppurated, and the iliac section shifted its position. A succeeding operation proved successful. The second case was due to the placing of the pubic section of the filigree upon extraperitoneal tissue, which proved too loose and lax to hold it in position. It shifted and the hernia recurred, after one year, between the filigree and the pubic spine. The operation was repeated, but it has only recently been performed. These are the only cases of recurrence, and many of the operations were done more than six years ago.

The presence of the filigree has given rise to no untoward symptoms: there has been no pain, discomfort, swelling, nor atrophy of the testis, nor has there been any evidence of the excessive formation of adhesions, even below the level of the semilunar fold of Douglas, where the filigree has rested actually upon the peritoneum.

The following conclusions are reached by the author:

1. Few, if any, hernias, whether inguinal or ventral, can now be considered incurable.

2. In filigree implantation is to be found the only true radical cure that we know of at present.

3. The use of filigrees is attended by a slight increase in the danger of sepsis.

4. Suppuration is not an indication for the removal of a filigree.

5. Wires displaced into sinus should be removed without disturbing the filigree.

6. No belt or truss should ever be applied on the top of an implanted filigree.

7. For the reduction of very large inguinal hernias and the avoidance of paralytic ilius the Trendelenburg position should be used, the abdomen opened and the bowel withdrawn from within, aided by pressure from without.

8. In ventral hernias following appendicular abscess it is absolutely essential that the appendix be removed before implantation if this has not already been carried out.

9. Although in ordinary cases the lines elsewhere laid down with regard to the size, shape and position of the filigree should be adhered to as closely as possible, it must be remembered that cases will arise which will tax to the utmost the ingenuity of the surgeon. In such cases hidebound rules are worse than useless.

10. It is important in dealing with gigantic hernias that every precaution should be taken for the comfort and safety of the patient. There must be skilled assistance, full facilities for asepsis, a good light and plenty of it, and, as a matter of choice, spinal analgesia should replace general anaesthesia.

JAMES H. SKILES.

#### Wellington: Meckel's Diverticulum, with Report of Four Cases. *Surg., Gynec. & Obst.*, 1913, xvi, 74.

By Surg., Gynec. & Obst.

After stating that this abnormality is present in only about 2 per cent of the human race, the author discusses its embryology and its different anatomical relations as regards size, location, and attachment to surrounding structures. He believes its existence a more serious menace than is an appendix, and advises its removal when found, if the case will permit. His cases were briefly as follows:

Case 1. Male, aged 50; had had an acute abdominal crisis of two days' duration, with symptoms of obstruction. A diagnosis of probable appendicitis was made, but at operation a loop of bowel was found constricted by a Meckel's diverticulum, which was attached to the umbilicus. Following operation, a faecal fistula developed and the patient died two weeks later.

Case 2. Male, aged 7; since birth had had a fistulous opening at the umbilicus discharging mucus. The tract was dissected out and was found to be continuous with a Meckel's diverticulum. Patient recovered.

Case 3. Male, aged 58; had symptoms of an acute appendicitis. Operation revealed a gangrenous diverticulum, which was removed. Patient died three days later.

Case 4. Male, aged 55; had been sick two days, with abdominal pain, and a diagnosis of acute



appendicitis was made. Operation showed an acutely inflamed Meckel's diverticulum. This, as well as the appendix, was removed. The diverticulum was found to contain the breast bone of a small fowl, one prong of which had nearly perforated. Patient recovered.

The author was able to collect 326 cases of disease involving Meckel's diverticulum. There were 144 cases of intestinal obstruction (intussusception and volvulus not included); 59 of intussusception; 50 of acute diverticulitis; 27 of hernia; 21 in which the diverticulum was open at the umbilicus; 9 of volvulus; 6 of perforation in typhoid; 2 of perforation from trauma; 2 of tubercular ulceration; 3 of prolapse of bowel; and 1 each of pelvic tumor, perforating ulcer and cyst. Of these cases, a little more than three-fourths were males, and the mortality was nearly 60 per cent.

The statistics are then discussed in more detail, and a complete bibliography is found at the end.

### GASTRO-INTESTINAL TRACT

**Rövsing: A Case of Total Gastropnoxis with Dilatation of the Oesophagus** (Eb Tilfælde af total Gastropnoxi med Dilatation af Spiserøret). *Hosp.-Tid.*, 1913, vi, i.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports a case of gastropnoxis in a patient who was admitted in a condition of extreme emaciation. By means of sound and Röntgen examination a dilatation of the oesophagus just above the diaphragm was determined. Besides this an extensive gastropnoxis was found with the stomach close to the symphysis. At the operation one saw that both the cardiac and pyloric parts of the stomach had descended considerably, the former to such an extent that a part of the oesophagus 8 cm. long was found immediately below the diaphragm. No tumors or ulcerations were discovered. The dilatation of the oesophagus had been produced by traction and kinking at the hiatus. Hepatopexy, gastropexy and gastrostomy were performed. The patient made a good recovery and after she had gained considerably in weight the gastrostomy wound was closed. When discharged 4½ months after the operation the diverticulum had diminished to half its size and the patient was again able to eat in a natural way. Rövsing cites this case as proof against the assumption of Grödel and others, that gastropnoxis as a result of the loosening of both points of attachment of the stomach is inconceivable.

Kinking of the oesophagus as a result of gastropnoxis described here for the first time, may according to the author perhaps explain the so-called cardiospasm with dilatation of the oesophagus. Rövsing has noticed repeatedly that the vomiting in gastropnoxis has completely disappeared after elevating the stomach by gastropexy or by an abdominal binder.

CARL P. PERMIN.

**Skell: Report of a Case of Fibroid of the Stomach with Perforating Ulcer; Transgastric Resection; Recovery.** *Am. J. Obst.*, N. Y., 1913, lxvii, 421.

By Surg., Gynec. & Obst.

A male, aged 48, previously well, was taken acutely ill with hæmatemesis and malaria. Ten days later symptoms of perforation appeared. Operation revealed a round fibroma of the posterior stomach wall at the junction of the antrum and the pylorus. At the base of the tumor was a perforation of the mucous and muscular coats. A resection of that area of the stomach which held the fibroid was done through an incision in the anterior wall under gas anæsthesia. Profound shock resulted, but recovery ultimately followed. N. SPROAT HEANEY.

**Barling: Hypertrophic Stenosis of the Pylorus in Adults.** *Lancet*, Lond., 1913, clxxxiv, 231.

By Surg., Gynec. & Obst.

The author reports two cases of this condition. The first was a male, aged 27, with symptoms typical of pyloric stenosis—periodic vomiting of large quantities of fluid, evidence of stasis, loss of weight, and severe constipation. The illness began three years before admission. At operation the stomach was comparatively small, but its muscular coats were very hypertrophied. A firm, massive thickening involved the whole of the pyloric canal and encroached a little on the antrum. The thickening felt like a solid muscular structure such as the body of the uterus; it was nearly 3 inches long and about 1½ inches thick. A posterior gastro-jejunostomy by the no-loop method was performed, and an easy recovery followed. The patient continues well and in full work nearly 4 years after the operation.

The second case was a girl, 17 years of age, who had been admitted into the author's wards complaining of pain in the upper abdomen and vomiting. Her illness dated from a time six months previous to admission to hospital. The girl was evidently very ill, more so than one would generally expect to find in a case merely of simple stenosis of the pylorus, and he thought, from the character of the vomit and from the patient's general condition, that it was possible she was suffering from a stenosis in the small intestine rather than at the pylorus.

**Operation.** The pyloric canal presented a dense thickening sharply limited at both ends and resembling exactly the hypertrophic stenosis of young infants. The peritoneal surface was quite smooth and free from any indication of ulceration; there was no nodulation and no fixation on adjacent parts. The usual operation of posterior gastro-jejunostomy was performed. On the eleventh day optic neuritis was observed, and on that day tubercle bacilli were found in the urine. The patient died in five days, apparently from tubercular meningitis.

No facts were obtained suggesting the presence of stenosis in the patients' lives at an earlier date than that recorded in the preceding notes.

DONALD C. BALFOUR.



**Frédet and Tixier: Hypertrophic Pyloric Stenosis in an Infant; Gastro-Enterostomy at the Age of 13 Days; Cure** (Sténose hypertrophique du pylore chez un nourrisson; gastro-entérostomie à l'âge de treize jours; guérison). *Bull. et mém. d. l. Soc. méd. d'hôp. d. Paris*, 1913, xxviii, 868.

By Journal de Chirurgie.

This is the fourth infant which Frédet has operated for hypertrophic pyloric stenosis. Vomiting appeared on the ninth day and the operation was performed on the thirteenth. A transmesocolic posterior gastro-enterostomy (by von Hacker's method) was performed. A vicious circle appeared, which necessitated reoperation four days later. The distended afferent branch of the jejunum was anastomosed with the empty efferent branch. Some vomiting persisted, but finally disappeared after gastric lavage. The infant at the age of 109 days was in perfect condition.

In connection with this case, Frédet and Tixier discuss the therapeutic points involved. The two operations to be considered are, first, gastro-enterostomy, and secondly, extramucosal pylorotomy followed by pyloroplasty. Frédet claimed in his earlier articles (Frédet and Dufour; Frédet and Guillemot) that pyloroplasty was the operation of choice when possible. Stiles's earlier statistics also favored pyloroplasty. Since then the more recent statistics of Scudder and Richter have shown the results of gastro-enterostomy under a more favorable light. Moreover, Fallot's researches on infantile gastro-enterostomies have shown that there is a remarkable adaptation of the digestive functions to the new anatomical condition created by this operation. At present the authors tend rather to favor gastro-enterostomy, and hold that pyloroplasty should be done only in the less difficult cases. The surgeon's success, however, depends first of all on the condition of the patient when it reaches his hands, and this in turn is chiefly a question of the number of days which are allowed to elapse from the time of onset of the symptoms until surgical assistance is sought. MAURICE CHEVASSU.

**Frédet: Hypertrophic Muscular Stenosis of the Pylorus in an Infant; Presentation of a Case Operated in 1907** (Sténose du pylore par hypertrophie musculaire chez un nourrisson; présentation d'un enfant opéré en 1907). *Bull. et mém. d. l. Soc. méd. d'hôp. d. Paris*, 1912, xxviii, 789.

By Journal de Chirurgie.

Case 1 (reported by Dufour-Frédet). Operated at the age of two months; the patient is now 5½ years old and in excellent health. Case 2. Pyloroplasty at the age of 30 days; now 5 years and 3 months old. Case 3. Infant, 96 days of age, operated late and in a cachectic condition. Gastro-enterostomy. Death by shock 20 hours later.

The pathological specimen from this last case was very characteristic. The narrowing of the pyloric canal was due in part to an excessive development of the musculature, especially of the circular layer, and partly to overgrowth of the mucosa, the intri-

cate folds of which filled up the lumen of the abnormally long and narrow pyloric canal. The microscopic section showed no signs of an inflammatory process. The hypertrophy was manifestly due to congenital malformation. Frédet opposes Weill's theory that the primary lesion is a parietal gastritis whose later effects rise to the clinical picture of a progressive pyloric stenosis.

From the symptomatic point of view this case is also atypical. The usual history of two stages in the disorder was given. The first stage is characterized by vomiting, whose distinguishing features are its frequency (at each nursing), its violence (projectile), the constant absence of bile, and the small quantity of the vomitus. It is accompanied by gastric peristalsis. There is a marked and rapid loss of weight. In the second period, the stomach dilates; vomiting occurs at longer intervals; the quantity of vomitus is large; weight remains stationary. The pyloric tumor is difficult to make out, in spite of its volume and its firm consistency.

From the therapeutic point of view, the lighter grades of stenosis, which are amenable to medical treatment, must be distinguished. This treatment falls under the following heads:

1. The reduction of any inflammatory process, which may be superadded to the muscular hypertrophy, by diet, gastric lavage, regulation of the nursing, substitution for milk of more easily digested food, etc.
2. The control of the spasmodic phenomena by atropin, etc.
3. The maintenance of nutrition while the stomach is completely or partially inactive by means of injections of serum, gavage, etc.

On the other hand, when the early symptoms are very severe the stenosis is presumably very marked and probably is due to a primary malformation. In these cases, medical treatment, if attempted, should certainly not be unduly prolonged, because of the increase in the operative risk if the patient is too much enfeebled.

MAURICE CHEVASSU.

**Rammstedt: The Operation for Congenital Pyloric Stenosis** (Die operation der angeborenen Pylorusstenose). *Zentralbl. f. Chir.*, 1913, xl, 3.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author recommends as the operation of choice, in the congenital hypertrophic pyloric stenoses of the new-born, the invagination of the thickened muscle ring up to the uninvolved mucosa, whereby the constriction and spasm are removed at one stroke. This method is exceedingly simple and can be carried out very rapidly. In 2 cases, the author reached the desired result immediately, whereas in 3 cases treated by Weber's extramucosal pyloroplastile (2 Weber, 1 author) the pylorus became patent only after a week (probably as a result of abnormal folding of the mucosa). The operative method previously employed (gastro-enterostomy, open pyloroplastile) are too extensive for the weakened infant and the stretching of the pylorus according to Loreta is too uncertain. The author has not



observed any disadvantage from the exposure of the mucosa in either of the two cases; covering with omentum seems to him unnecessary after his experience and by prolonging the time of operation jeopardizes the life of the miserable infant. The author recommends immediate operation and in doubtful cases exploratory laparotomy, as soon as a diagnosis of pylorospasm with pyloric tumor has been made in the new-born. A short simple laparotomy is not too dangerous for the weakened infant. Report of a case history.

BLEZINGER.

**Pagenstecher: Gastropexy by Means of the Ligamentum Teres** (Gastropexie vermittels des Ligamentum teres). *München. med. Wchschr.*, 1913, lx, 24. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Plication of the ligamentum gastrohepaticum to relieve gastropotosis is impossible in many cases because of its delicacy and fragility. Pagenstecher in hanging up the pars pylorica (gastropotosis according to Grödel is chiefly a pyloroptosis) uses a resistant material: the ligamentum teres. The direction of the pull is about the same as in the plication, because the ligamentum teres is inserted into the portal entrance close to the ligamentum gastrohepaticum. Pagenstecher severs the ligamentum teres directly at the umbilicus, frees the lower part of the ligamentum suspensorium hepatis (whose free margin is formed by the ligamentum teres), from the anterior abdominal wall to the anterior margin of the liver. Thus a flap is formed, wider in front than behind, which can be conveniently turned to the left and posteriorly to be fastened to the anterior aspect of the stomach. A torsion of the stomach around its long axis is just as impossible by this method as by the plication of the ligamentum gastrohepaticum. Pagenstecher advises against using a strip of free fascia in place of such a suspensory band.

COHN.

**Fletcher: Subtotal Gastrectomy for Gastric Atony.** *Am. J. Surg.*, 1913, xxvii, 19.

By Surg., Gynec. & Obst.

Fletcher states that in a review of the literature of gastric surgery he did not find a recorded case of gastric atony made worse by attempts at drainage, in which gastrectomy had been deliberately undertaken for the purpose of cure. His patient, a female aged 25 years, was subjected to the following stomach operations: (1) A posterior gastro-enterostomy for drainage of a stagnant, atonic stomach. (2) A second gastro-enterostomy, three inches from the first, made because the primary stoma was supposed to give insufficient drainage. (3) A third gastro-enterostomy at the most dependent part of the fundus on the anterior surface. The extensive adhesions so rotated the stomach as to make the fundus appear the lowest part of the viscus. (4) Pylorotomy and tearing down the third (fundus) anastomosis indicated because of great pain and projectile vomiting. (5) Subtotal gastrectomy — the removal of all except a small pouch of the fundus,

together with ten inches of the jejunum attached to the posterior wall of the stomach. The jejunum was anastomosed into the oesophago-gastric pouch. The proximal end of the duodenum was closed and the distal end, represented by four inches of the jejunum, implanted into the jejunum well below where it entered the stomach pouch. Recovery.

Fletcher remarks that when dealing with gastric neuroses there is some excuse for an occasional error on the clinical side of diagnosis — that the clinician is occasionally justified in advising an exploratory incision; but there is no excuse for the surgeon who deliberately drains an atonic stomach. He says the indications for stomach drainage are clearly cut, and the safe and sane rule in gastric surgery is, "When in doubt do not perform gastro-enterostomy." His case was remarkably improved six months after the subtotal gastrectomy, but he quotes Mayo to the effect that "operations upon atonic stomachs in neurasthenic individuals are seldom if ever followed by satisfactory results lasting for any length of time."

**Bartlett: The Use of a Murphy Button to Effect Duodenojejunosomy after Gastrojejunosomy.** *Ann. Surg.*, Phila., 1913, lvii, 81.

By Surg., Gynec. & Obst.

When a modern gastro-enterostomy is complicated by the course of a "vicious circle," the shorter the loop the more difficulty we experience in performing a secondary entero-enterostomy.

In the case under discussion the author was unable to proceed in the customary way, hence an opening was made in the anterior wall of the stomach, through which the posterior gastro-enterostomy opening could be plainly seen. The half of a Murphy button was thrust without difficulty through this into each intestinal loop, and the new opening in the stomach sutured. It was now no trouble to draw the transverse colon forward and telescope the two halves of the button, after making a tiny incision over each.

The patient did not vomit again before leaving the hospital.

**Von Haberer: Arterio-mesenteric Occlusion of the Duodenum** (Der arteriomesenteriale Duodenalverschultz). *Ergebn. d. Chir. u. Orthop.*, 1913, v, 467. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author considers arterio-mesenteric occlusion of the duodenum an anatomical compression of the distal end of the duodenum by the root of the mesentery. This arises through tension in a downward direction at the root of the mesentery. The superior mesenteric artery thus forms a sharper angle with the aorta and the duodenum; passing in this angle is compressed. If to this tension is added pressure from the ventral surface in a dorsal direction the displacement becomes more fixed.

The clinical picture is typical. The pulse rate increases suddenly, usually accompanied by obstipation, increased peristalsis of the stomach, and



severe vomiting. It may end by collapse. Acute dilatation of the stomach may be superimposed. If untreated, death may result. The Schnitzler position usually brings recovery. Lean, emaciated individuals with enteroptosis, abnormalities in the mesentery, etc., are predisposed to the disease. The onset is very sudden, i. e. following a hearty laugh as in one of the author's cases. Operations, especially those causing a change in the position of the organs in the abdominal cavity, may be the cause. If dilatation of the stomach is the most prominent feature of the clinical picture, the arterio-mesenteric occlusion may be primary or may follow post-operative acute dilatation of the stomach. Acute post-operative dilatation of the stomach can be present without duodenal occlusion. A chronic form of the disease is also recognized which gives symptoms characteristic of intestinal obstruction.

WALTHER HANNES.

**Urrutia: A New Case of Jejuno-Colic Fistula Due to a Peptic Ulcer of the Jejunum Following Gastro-Enterostomy** (Nouveau cas de fistule jejuno-colique par ulcération peptique du jejunum consécutive à une gastro-entérostomie). *Arch. d. mal. d. l'appar. dig. e. d. l. nut.*, 1912, vi, 680.

By Journal de Chirurgie.

The patient was 48 years of age and had suffered for fifteen years from pain which came on late after meals. In 1910 indubitable signs of pyloric stenosis were present. Ramonede then performed a posterior gastro-enterostomy, and rapid improvement was observed.

After this, the patient used no discretion in diet or in the use of alcoholic liquors. In September, 1912, he was again much emaciated and suffered from diarrhoea; there were fifteen or twenty stools a day. The breath had a faecal odor and the vomitus, which rarely occurred, had the same characteristic. Succussion splash was present in the abdomen at a moment when the stomach was empty, as determined by the tube. Aspiration during the fasting period sometimes yielded a thick yellowish liquid with a faecal odor. The test meal showed hyperacidity. X-ray plates were made, which pointed toward a fixation of the greater curvature. The bismuth shadow was extended and drawn out toward the left.

**Operation.** Adhesions were broken up. The transverse colon in its middle portion was then found adherent to the jejunum, which was much dilated and filled with fluid. The jejunum extended from this point of adhesion toward the left iliac fossa. These jejuno-colic adhesions were broken up. The gastro-jejunal anastomosis was then seen to be still intact, but 3 cm. below it there was a perforation of the jejunum, which was in juxtaposition to a similar perforation on the posterior surface of the transverse colon. The edges of the defects were thick, but friable. The two perforations were closed separately; recovery was uninterrupted.

J. OKINCZYK.

**McGuire: The Successful Removal of Over Eleven Feet of Small Intestine.** *Surg., Gynec. & Obst.*, 1913, xvi, 40. By Surg., Gynec. & Obst.

That a patient can have gangrene of over eleven feet of small intestine, as a direct sequence of the ordinary "sore throat," that diagnosis can be made sufficiently early to permit of successful removal, and that such extensive removal can be made without permanent harm to the individual, make the following case of particular interest.

The patient was a young man of 20 years, in good health until April 1, 1912, when an infection of his throat occurred. This was of no great severity, but was accompanied about the fourth day with constipation, cramp-like pain all over the abdomen, and in a few days with vomiting. April 9th vomitus had a foul odor; on the 10th was distinctly faecal.

On entrance to the hospital, the same day, he vomited a large quantity of faecal material. Leucocytes 15,000, temperature 99°, and pulse 119. The urine showed a slight trace of albumin, with negative microscopical findings. Palpation showed a distended abdomen, but no mass. Immediate operation revealed extensive gangrene of the ileum, due to mesenteric thrombosis. The involved bowel was removed, both ends were closed, and a lateral anastomosis was made between the cæcum and remaining ileum.

The patient had seven stools on the fourth day without catharsis, and from six to eight on the succeeding days up to the tenth. On this day he suddenly went into collapse, later passing a large quantity of blood from the rectum. From this day his convalescence was uninterrupted, the number of stools gradually decreasing.

At first he was placed upon a diet rich in starches and sugars, and was given opium to control the frequency of the stools. Later, under the ordinary hospital diet, he rapidly gained in weight, and the diarrhoea ceased without the administration of opium. The change in the number of stools was doubtless due to his improved physical condition.

The removed bowel was measured, after the mesentery had been cut away, and found to be 336 cm. in length. The discrepancies in the literature regarding the effect of removal of large sections of bowel suggest some error in the different methods of measurement. To determine this fact the intestinal canal of several fresh autopsies were measured after different methods. Eleven feet of small intestine were measured in situ, the usual method in operative reports. This amount was then removed and measured with the mesentery attached. The average length was ten feet and nine inches. The mesentery was then divided close to the bowel, the intestine placed in a straight line without traction, and the average length was ten feet and six inches.

After careful search, the author concludes this to be the second largest resection of intestine in the American literature, and the tenth largest yet reported.



The patient was seen February 1, 1913. He has one large stool each morning, feels well, and now weighs 148 pounds, a gain of about 30 pounds.

**Katch, Gerhardt, and Borchers: Contributions to the Study of Intestinal Movements; Report No. 2** (Beiträge zum Studium der Darmbewegungen. Mitteil. 2). *Ztschr. f. exp. Pathol. u. Therap.*, 1913, xii, 237.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In a previous paper, the authors report the technique of their operation of inserting a celluloid abdominal window, through which observations were made. The physiological movements of the various parts of the rabbit's intestine (small intestine, cæcum, colon, sigmoid, and rectum) were observed. There are two kinds of movements in the small intestine — peristalsis and pendulum. The movement in the proximal end of the colon seems to be mainly one of the haustra. This part of the intestine is Böhm's "pill machine." The intestinal content is concentrated ultimately in the lower portion; the separated balls of feces are approximated one to the other like pearls on a necklace. The formed masses are separated from one another by contraction rings. Experiments were tried to determine what effect physical stimuli would have. Cold, in the form of ice laid on the window or applied as an ethyl chloride spray, causes an increase in tone, loss of motion and anæmia of the parts. Heat, in the form of hot air applied to the window, caused hyperæmia and increase in the pendulum and peristaltic movements. Heating above 50° C. causes an arrest of movements and a serofibrinous exudate glues the affected parts of the intestine together. This phenomenon is called sterile overheating peritonitis. It would be impossible to cause it by the therapeutic application of heat through the skin without causing serious damage to the skin. Massage causes an increase in peristalsis only if an intestine was in a previous state of irritability; otherwise only intense hyperæmia is seen. Although Sanders was able to get contractions of the rabbit's intestine in sodium chloride bath by applying electricity, the authors failed to get an increase in the movements of the intestine. All these experiments were substantiated by observations on the intestines of an old lady who had an abdominal hernia and whose abdominal skin was atrophic, non-sensitive and transparent.

**Katsch and Gerhardt: *Ibid.*, Report No. 3, p. 253.**

The action of the following groups of reagents was observed through the abdominal window: Vagus stimulators — pilocarpin, physostigmin; vagus inhibitors — atropin; sympathetic stimulators — adrenalin, nicotin, caffein, pituitrin; opium alkaloids — morphin, pantopon, opon, apocodein. After giving pilocarpin there is instantly an increase in the pendulum and peristaltic movements. The rate is increased; the contractions

are exaggerated, irregular in sequence and without purpose; more energy is consumed and less accomplished. A slight hyperæmia becomes apparent at the same time. Physostigmin has the same action. The authors believe that this vasomotor action is transmitted by the way of the vagus. The antagonistic action of atropin in small and large doses was not detected. Intravenous injection of  $\frac{1}{2}$  to 12 mg. produced only a quiescence. Atropin has an effect on the tone and quiets the motor centers of the intestine. Injections of adrenalin cause an instantaneous cessation of all intestinal movements and extreme anæmia. It acts much more quickly than atropin, due to the rapid dissociation of the former, and on this account rectal injections only affect the rectum and not the small intestine. Nicotin shows the same action on the sympathetic system, and is observed only after giving large doses. Caffein causes temporary anæmia and cessation of movement. Pituitrin brings about a marked stimulation of intestinal movements and a temporary anæmia, which is followed by a hyperæmia. These increased movements have, however, something co-ordinate about them not found with other vagus stimulators. After giving morphin, there is an initial increase in the movements followed by a slow quiet rhythm. Pantopon and apocodein hydrochloride act in the same manner.

**Katsch and Gerhardt: *Ibid.*, Report No. 4, p. 290.**

Fear, pain, and unpleasant odors cause an instantaneous cessation of the intestinal movements. This is accomplished by anæmia due to the contraction of the splanchnic vessels. Joy has the opposite effect, the motility being increased. This is probably a reflex action by way of the vagus nerve.

MÜLLER.

**Wrigley: Acute Intestinal Obstruction Due to Volvulus of the Cæcum.** *Lancet*, Lond., 1913, cxxxiv, 166.

By Surg., Gynec. & Obst.

The patient, aged 29, had been in good health, except for three attacks of appendicitis, the last being five weeks before the present illness, when she was operated on and her appendix removed; uneventful recovery. She was seized with acute abdominal pain in the region of the umbilicus, followed by vomiting and profuse diarrhœa. She stated that she vomited greenish fluid and was purged every few minutes, but had not passed flatus for some hours. Twelve hours after onset, she was admitted to Manchester Royal Infirmary. She looked extremely ill — features pinched, tongue dry and furred, temperature 100° F., and pulse 114. On inspection, abdomen was found to move freely with respiration, and a large mass the size of a coconut was seen in right iliac and umbilical regions, and in this situation waves of peristalsis occasionally occurred. Palpation of abdomen produced vomiting. There was slight rigidity and extreme tenderness. Rectal examination revealed great tenderness on right side of Douglas' pouch.



The laparotomy disclosed an enormously distended cæcum, and a considerable part of the ascending colon rotated, anticlockwise, around its long axis one complete twist, and then acutely flexed, so that the cæcum was lying transversely in the abdomen, with the fundus of the cæcum just beyond the middle line above the brim of the pelvis. The entire cæcum, part of the colon and the terminal part of the ileum were resected. Patient made a good recovery.

Comer and Sargent have analyzed 57 cases of volvulus of the cæcum and recognize three anatomical varieties. The author classifies this under the acquired variety.

C. H. DAVIS.

**Andrews: Appendix Abscess Discharging Pus into the Urinary Tract.** *Va. M. Semi-Monthly*, 1913, xvii, 499. By Surg., Gynec. & Obst.

In this interesting paper Andrews details four unusual cases of appendiceal abscess and reviews several more from the literature. His cases were all of a chronic variety, the patients having suffered from repeated attacks. They came into the hospital with marked urinary disturbance, and pain, frequency and decided pyuria were prominent symptoms. Operation in all cases revealed an appendiceal abscess in immediate relation to the bladder or renal pelvis, and in one case the appendix itself emptied into the bladder by way of a direct sinus. In his second case the appendix lying anterior to the renal pelvis was adherent to it. At the time of operation no definite sinus formation could be determined, but urine discharged through the lumbar wound for two weeks following intervention.

The cases are of particular interest in view of the fact that such etiologic factors are frequently overlooked, and patients are treated merely for purulent processes occurring in the urinary tract itself.

J. S. EISENSTÄDT.

**Graham: Primary Cancer of the Vermiform Appendix.** *Edin. M. J.*, 1913, x, 30. By Surg., Gynec. & Obst.

The author thinks that although primary carcinoma of the appendix is rare, it is of much more frequent occurrence than is popularly believed. MacCarty and McGrath collected 5000 cases from the Mayo clinic, 22 of which, or 0.44 per cent, showed primary carcinoma.

The author has found, in a collection of 172 cases of primary carcinoma of the appendix, that the distinctive characteristics are (1) the benign nature of the growth, (2) the early age incidence, and (3) the type of cell, which is most commonly of the spheroidal type.

Six cases are reviewed in the article, and the salient features of these cases are: (1) In 4, operation was performed for symptoms of appendicitis. (2) The age of the patient in all the cases was under 30 years. (3) The tumor in 4 was situated at the tip

and in 2 in the middle third. (4) The tumor has a characteristic yellow color. (5) The lumen in all cases was obliterated at the site of growth, and signs of old appendicitis were found in these areas. (6) No metastases or enlarged glands were observed.

It is interesting to note that the youngest case was that of a young woman 21 years of age, operated by Mr. Cotterill in March, 1909, who is still enjoying perfect health, nearly four years later. The tumor in her case resembled microscopically a scirrhus type of cancer, with more cellular tissue than usual and having an invasion of the mesentery by cancer cells.

The author believes, with Letulle, MacCarty and McGrath, that cancer of the appendix is closely associated with chronic appendicitis and obliteration, because in contradistinction to cancer in other parts of the alimentary canal, the appendices are always occluded and no trace of the lumen in the affected area is found. In all the cases the site of the tumor was in an area of chronic inflammation and irritation, as a kink, concretion, or fibrosis.

Lastly, Graham concludes that in a certain number of cases the irritation of isolated tubules or mucosa undergoing obliteration may excite cancer growth.

Graham, in summarizing, thinks that the cancers are derived from the glandular epithelium and that the yellow color is due to the fat in the cells. Also that the tumor in 64.3 per cent of cases was at or near the tip of the appendix. The sphenoidal celled cancer occurs in 73.8 per cent in a series of 182 cases, the average age being 27.2 years, and this growth is the most benign, metastases being found in only one case. The adenocarcinoma comprises 18 per cent of all cases, and more often shows metastases in the cæcum and other abdominal organs. The average age for this type is 39.5 years. From the above it would seem that the microscopic picture would somewhat govern the prognosis.

EUGENE CARY.

**Parks: A Simple Method of Introducing the Purse-String Suture for Covering the Stump of the Appendix.** *J. Am. M. Ass.*, 1913, lx, 29. By Surg., Gynec. & Obst.

The suture is begun at the mesenteric side of the appendix, a bite being taken to include the vessels near the base and continued away from the mesentery, far enough from the base of the appendix to insure a pocket in the cæcum sufficiently large to hold the stump. Bites are taken in the wall of the cæcum at points which may be illustrated by using the numerals on the face of a watch. Take 12 o'clock as the mesenteric side and introduce the needle, pointing it away from the mesentery at 12 o'clock, 10, 2, 8, 4 and 6 o'clock. The free ends of the suture are drawn on, and the stump of the appendix automatically disappears. The free ends are tied and the purse-string is complete, with a sufficient number of approximating points to insure good coaptation.

LEO DWAN.



**Duroux: The Pathological Torsions of the Large Intestine and Their Surgical Treatment** (Les torsions pathologiques du gros intestin et leur traitement chirurgical). *Rev. d. gynec. e. d. chir. abdominale*, 1913, xix, 319. By Journal de Chirurgie.

The torsions which occur normally during the embryonic development of the large intestine are grouped about the area of distribution of two arteries, the superior and the inferior mesenterics. The same general division holds true in a consideration of the pathological torsions. The author takes up in turn the torsions occurring in those parts of the large intestine which are supplied by the superior mesenteric artery (the cæcum and the ascending and transverse colon) and those torsions which affect the descending and sigmoid colon, whose vascular supply is derived from the inferior mesenteric. The commonest and best known form of colonic volvulus is that of the sigmoid; cæcal volvulus and volvulus of the transverse colon follow in the order named. They occur in the proportion of eighteen cases of sigmoid to one of cæcal volvulus. Volvulus of the transverse colon is commonly associated with either cæcal volvulus or volvulus of the sigmoid. Its occurrence alone is a rarity.

I. CÆCAL VOLVULUS (torsion of the cæcum and of the lower portion of the ascending colon). Duroux distinguishes three varieties:

(1) Simple cæcal torsions (that is, cæco-ascending colon).

(2) Complex cæcal torsions. These include the cæcal torsions which involve also either the lower end of the ileum or the whole of the jejuno-ileum, and those cæcal torsions in which a portion or the whole of the transverse colon is implicated.

(3) Complete cæcal torsions (jejuno-ileo-cæco-transverse-colic). This is really a volvulus of the embryonic umbilical loop. Gubé called it "jejuno-colic volvulus."

1. *Simple cæcal torsions.* The mechanism in these cases may be pivoting of the cæcum on a transverse axis, the base of the cæcum thus rising toward the epigastrium (cæcum erectum of the Germans). It is in these cases that the various positions are found that Wilms and Klose have characterized under the head of "cæcum mobile." In addition to the movement of pivoting, the cæcum may also undergo torsion about its vertical axis or about its mesentery. The first type of torsion is only produced in cases in which the cæcum is adherent, while its base is free and in most cases very much dilated. The torsion may be clockwise or anticlockwise. The torsion about the mesentery is found in cases in which the cæcum has a secondary mesentery which has been formed by the stretching of those retrocæcal peritoneal leaves which are usually adherent to the posterior wall. If this were a primary mesentery, its continuity with the meso-colon would inevitably involve the ileum in the torsion, and we should be dealing with one of the cases which have been classed under complex torsion.

2. *Complex cæcal torsions.* In these cases the mechanism includes pivoting only secondarily; the rotatory movement is the dominant one. This is chiefly rotation about the mesocæcum, which is uninterruptedly continuous with the meso-ileum. Rotation about the cæcal axis is only possible when the adhesion of the colon has been incomplete, leaving the whole of the cæcum and the lower portion of the ascending colon free and mobile. The ileum offers no resistance to this rotatory movement; if the rotation is from left to right it is carried anterior to the cæco-colic segment; if from right to left, it passes posteriorly to the latter.

3. *Complete cæcal torsions.* These torsions can occur only in cases where there has been an absence of the usual processes of fusion of the mesentery of the umbilical loop with the parietal peritoneum. The upper limit of the intestine involved in the process may be at the duodeno-jejunal angle, though the duodenum itself may be involved if its mesentery is not adherent. The lower limit may be the hepatic flexure, the middle portion of the transverse colon, or the splenic flexure. The degree of rotation may be from 180 to 360°, or even more.

In all these torsions there is a marked distention of the portions of the intestine comprised in the volvulus. This is shown by the presence of the cæcum in umbilical and inguinal hernias.

When the cæco-colic segment undergoes torsions about its own axis there is only slight interference with the mesenteric circulation, and the intestinal wall may remain in viable condition for several days; but this is not the case where torsion has occurred about the mesentery. The twisting of this structure brings about a real vascular obstruction, and the signs of gangrene are more or less early added to the phenomena of obstruction.

*Etiology and pathogenesis.* While rare in France (18 published cases), cæcal volvulus appears to be more frequent in certain other countries (Scandinavia and Russia). It comprises only 10 per cent of the cases of volvulus, while sigmoid volvulus includes 50 per cent and volvulus of the ileum 34 per cent. It is less common in women than in men (150 men to 70 women). Its pathogenesis is dependent upon the presence of two factors: mobility and distention (influence of vegetable diet). This cæcal distention may also result from the retraction of peritoneal bands at the hepatic flexure of the colon.

*Symptoms.* Although a cæcal volvulus may occur suddenly without premonitory symptoms, more commonly prodromal pains, colic and gurgling occur in the cæcal region together with localized distention. Radiography shows that the bismuth meal remains in the distended cæcum for 12 or even 24 hours. There are frequently attacks of obstipation, with intermittent diarrhoea.

When the volvulus is completed it manifests itself by the occurrence of very severe pain, which lasts about ten minutes and then abates, only to reoccur somewhat less severely. The symptoms of obstruction, especially vomiting, then appear. At



the end of a few hours, a localized prominence of the abdominal wall is usually noted, either in the periumbilical region or in the left hypochondriac and umbilical region. Over this prominence peristaltic waves are seen. The tumor has a tympanitic resonance, and during the periods of remission yields a distinct hydro-aëric note. After a misleading period of remission, during which the local symptoms of complete obstruction persist, the signs of peritonitis due to the perforation of the loop, become evident. Death occurs at the end of a period varying from 3 to 8 days. The course may, however, be shorter (24 hours) or more prolonged (15 to 20 days).

**Diagnosis.** The diagnosis is difficult and is not usually made unless volvulus is proven. More commonly the condition is mistaken for appendicitis, twisted ovarian cyst, or intussusception.

**Treatment.** This must be surgical. If gangrene is not yet present the volvulus must be reduced; but in the presence of gangrene resection must be performed. The reduction of the volvulus calls for delicacy in manipulation, for the distention is such that tears may be produced by moderate traction. If the resistance encountered in reducing the volvulus is too great, the loop should be punctured or incised or a rectal tube inserted as high as possible. After reduction, typhlopecty has been recommended to prevent recurrence of the volvulus. If the walls of the loop show changes which point toward difficulty in evacuation of the intestinal contents, a cæcostomy or an appendicular fistula should be established. Entero-anastomosis is illogical if the volvulus is not reduced, and is inferior to simple typhlostomy in any case. Where reduction of the volvulus is accomplished, 60 to 70 per cent of the cases recover. In the cases of gangrene where resection is necessary, only 30 to 33 per cent recover.

**II. TORSION OF THE TRANSVERSE COLON.** These comprise (1) complex torsions, that is, those associated with volvulus of the cæcum and small intestine or with sigmoid volvulus; (2) simple torsions, which are more rare, since Duroux has been able to find only ten cases reported (Guinard's case is the only one in the French literature).

The simple torsions may occur about the arc of the colon or about the axis of the mesentery. Sometimes there is present a peritoneal band about which the colon wraps itself. Excessive length or distention of the transverse colon predispose to torsion. Pregnancy and the Trendelenburg position in laparotomy are mentioned as accessory factors. The symptoms of volvulus of the transverse colon are analogous to those of other cases of volvulus. The onset may be sudden or progressive. Rather characteristic in certain cases are the attacks of pain and periumbilical colic with temporary obstruction and vomiting. When the volvulus is complete enormous distention of the middle portion of the abdomen occurs, which, however, is not equally distributed on the two sides. Peristaltic waves are sometimes seen. Occlusion by kinking

of the splenic flexure and stenosing cancer of the transverse colon must be considered in the differential diagnosis. The surgical treatment is by choice the reduction of the volvulus, if the presence of gangrene does not necessitate resection. It is well, after reduction, to perform fixation of the colon to the parietes in order to avoid recurrence. Transverse colostomy, or cæcostomy, is often advisable as a secondary operation, but it may be dispensed with when, by means of the rectal tube, it is possible to rid the distended loop of its gaseous contents.

**III. TORSION OF THE SIGMOID.** Complete volvulus of the pelvic colon is represented in those cases in which torsion of the loop occurs about the axis of the mesosigmoid. The fixed point is the rectosigmoid portion, and the rectum is carried either anteriorly or posteriorly. Certain changes in the mesentery favor the production of the volvulus, especially the retraction due to mesosigmoiditis, which tends to approximate the points of pelvic attachment of the ends of the sigmoid. Certain congenital abnormalities, such as the lack of fusion of the iliac mesocolon and the congenital dilatation of the sigmoid, predispose to this accident.

The strangulated loop may attain an enormous size and occupy the entire abdomen. The longitudinal muscular bands and the haustra disappear. Perforation, by gangrene, usually occurs rather late in spite of the apparent thinness of the walls and sometimes involves the higher portion of the colon first. From the symptomatic point of view it is worthy of note that sigmoid volvulus is commonly preceded by a long period of constipation, with occasional attacks of incomplete occlusion due to the beginning of torsion. The pain at the onset is localized in the left iliac fossa and in the pelvis; later it becomes more generalized. Vomiting is inconstant and occurs late. On the other hand, obstruction is usually complete. The meteorism is most marked in the iliac fossa and in the left flank. Ordinarily no peristaltic waves are to be seen in this region. If surgical interference is not undertaken, perforation and peritonitis occur. In certain cases death results from cardio-pulmonary embarrassment caused by the enormous distention which pushes up the diaphragm.

Treatment is entirely surgical. Sigmoidostomy alone should not be performed, because, while temporarily relieving the symptoms, it does not affect the cause of the occlusion. Detorsion and resection are the two rational procedures. Detorsion is sometimes difficult to effect on account of the extreme distention of the loop. In these cases the loop should be aspirated or incised, or relief may be obtained by the introduction of a rectal tube. After detorsion has been accomplished the loop may or may not tend to a recurrence of the volvulus. Colopexy and coloplication, which have been performed to avoid this contingency, have not always been successful in their aim. For this reason the tendency is to perform a resection of the sigmoid, either at once or as a secondary operation in ac-



cordance with the condition of the patient. The later results following resection appear to be superior to those simple detorsions. When gangrene is present resection is indubitably necessary, but in these cases, of course, the prognosis is less favorable.

GEORGES LABEY.

**Watson: Surgical Tuberculosis of the Colon, Rectum, and Anal Canal.** *Practitioner*, 1913, xc, 220.  
By Surg., Gynec. & Obst.

According to Watson, tuberculosis may be met with in the large intestine: (1) as part of a general miliary infection; (2) as a general or localized ulcerative colitis, when it is usually secondary to tuberculosis elsewhere; (3) as a localized hyperplasia in the cæcum or at one of the flexures of the colon.

Hyperplastic tuberculosis of the colon is as a rule a primary manifestation. In 88 out of 100 cases collected by Lockhart Mummery, the cæcum and ascending colon were the parts involved. The prominent characteristic of this condition is tumor formation, resulting in a close resemblance to malignant disease. The tumor is movable, associated with colic and, it may be, obstruction. Fixation is a late condition, as is secondary suppuration. When the specimen is examined the most conspicuous feature is the great thickening of all the coats of the bowel, uniformly distributed round lumen, which makes the bowel resemble a solid tube, and to which the name "gas-pipe colon" has been given. Stenosis and stricture, either general or localized to one portion of the tumor, ultimately occurs.

The symptoms of this condition are those of carcinoma of the colon, except that the presence of blood in the stools and progressive loss of flesh somewhat favors a diagnosis of cancer.

The treatment consists in establishing a diagnosis by exploratory operation, in the relief of obstruction by colostomy or short-circuit, and the extirpation of the tumor whenever possible.

Tuberculous ulceration of the colon is nearly always secondary to tuberculosis elsewhere in the body. Unlike tuberculous ulceration of the small intestine, which is mainly a disease of childhood, tuberculous ulceration of the large intestine is most commonly met with in adults, secondary to advance pulmonary tuberculosis.

The cæcum and ascending colon are most commonly affected, and although the ulcers tend to encircle the bowel they rarely produce stricture or obstruction.

The symptoms of tuberculous ulceration do not differ from those of other forms of ulcerative colitis. The association of diarrhœa with blood and pus in the stools, combined with phthisis, should lead to a diagnosis, which will usually be confirmed by a microscopic examination of the discharge.

The treatment of this condition can only be palliative and symptomatic, if active disease of the lungs coexist. In the rare cases in which this condition is met with independent of pulmonary disease, treat-

ment by means of appendicostomy and irrigation should certainly be tried, though without much hope of permanent benefit.

Tuberculous ulceration of the rectum and anal canal commonly results from extension from the colon. The ulcers are often situated on the upper surface of Houston's valves, where they are easily missed with the sigmoidoscope, unless carefully looked for. Fistula in ano commonly results from the invasion of the ischiorectal fossa by ulceration.

Treatment consists in appendicostomy, combined with irrigation both from above and below. Some temporary improvement may result from ionization with a solution of zinc sulphate.

Tuberculosis of the anal skin consists of small grayish nodules close to the anal margin, which if not promptly excised lead to ulcer formation.

Tuberculous fistula in ano is characterized by extensive undermining of the skin, which is blue and boggy, with little or no induration of the surrounding parts. The internal opening between the sphincters is usually large, ragged and ulcerated, and the external opening, instead of preserving a button-like granulation, is patent and irregular.

In cases of tuberculous fistula with no evidence of tubercle elsewhere, early radical operation is most important to remove a possible source of general infection. Either local or spinal anæsthesia should be used, and the patients not confined to bed after the first day, nor should they be kept in the recumbent position, but should have plenty of fresh air, sunshine, and good food.

R. W. MCNEALY.

**Yeomans: Cæcosigmoidostomy: an Operation for Short-Circuiting the Colon.** *Am. J. Surg.*, 1913, xxvii, 23.  
By Surg., Gynec. & Obst.

Yeomans calls attention to the important work of touchard, Metchnikoff, Combe, and Lane in colonic Basis as a fruitful source of intestinal autotoxæmia, and states that there still remains a large group of patients who do not respond to hygienic, dietetic, medical or mechanical therapy. These have a real mechanical obstruction to the passage of the bowel contents — angulations, flexures, bands, adhesions, chronic volvulus (cæcal or sigmoidal), or stricture — and require surgical treatment. Some short-circuiting operation will usually suffice. The objection to the ileosigmoidostomy of Lane is that it leaves the entire colon as a blind pouch for fermentation and autotoxæmia.

Yeomans proposes cæcosigmoidostomy by a broad lateral anastomosis with a double row of sutures, and reports three cases with perfect results. The first operation was performed two years ago on a woman 48 years of age who had a giant sigmoid. This case is illustrated by three radiographs. The second patient was a man aged 19, with obstruction of the transverse colon not relieved by a lateral ileosigmoidostomy previously performed. The third case, a woman aged 23, suffered from inveterate constipation and autotoxæmia, the result of a true cæcum mobile of Wilms.



Drainage of the colon at its most dependent points, namely, cæcum and sigmoid, is the correct surgical principle. Anatomically this is impossible in some cases, but radiographs of the colon and sigmoidoscopy will usually enable the surgeon to determine the practicability of this procedure in advance of operation. The writer concludes that, when feasible, cæcosigmoidostomy is a safe and easy operation. It drains the entire colon at its most dependent points without leaving any blind pouches; anchors and drains the movable cæcum and the giant sigmoid, as well as chronic volvulus of sigmoid; and cures permanently constipation due to mechanical obstruction (obstipation) at any point in the colon from cæcum to apex of sigmoid.

**Heller: The Present Status of the Combined, i. e. Abdomino-Dorsal, Extirpation of the Carcinomatus Rectum** (Der gegenwärtige Stand der kombinierten, i. e. abdominodorsalen Exstirpation des carcinomatösen Mastdarms). *Ergbn. d. Chir. u. Orthop.*, 1913, v, 488.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In spite of the consensus of opinion at the German Surgical Congress in 1906 against the Kraske combined rectum extirpation, the number of operations by that method, according to Heller, have increased. From the compiled statistics of the years 1910-1912, Heller reports a mortality of 29 per cent, of which 36 per cent were men and 15 per cent women. The best results were obtained by W. Mayo, with 18 per cent, Goepel with 15 per cent, and Rottmar with only 6 per cent mortality. The ideal combined method consists in a primary abdominal dissection of the tumor and a secondary extirpation from below through the coccyx route with implantation of the oral end of the intestine into the sphincter after the method of Hochenegg. The principal modification of the operation is the formation of an artificial anus after abdominal dissection of the tumor and amputation of the peripheral end of the rectum (Quénu, Hartmann). Heller regards the combined extirpation of the rectum not as a measure of necessity, but as one of choice. It is indicated in carcinoma with its upper borders in the pars pelvina recti, that is, above the muscular diaphragm, because of its direct relation to the lymphatic gland of the upper hæmorrhoidal vessels. He advises it also in spreading tumors, especially with adhesions to the organs of the urogenital tract. The method is contra-indicated in generalized carcinomatosis, old age, very sick patients, arteriosclerosis and adiposity. The advantage of the combined method, and especially the sacral method, is the possibility, according to the author, of performing a radical operation because of the accessibility of the lymphatic glands, the good exposure of the field of operation of the tumor, and the discovery of abdominal metastases, and the possibility of mobilizing the colon while conserving the relationship of the vessels, and drawing it down to the sphincter. Finally, asepsis can be retained to the end of the operation. Heller

described in detail the method of conserving the vessels, to avoid gangrene of the oral end of the intestine following rectum resection. Section of the superior hæmorrhoidal artery, advised by Rehn, permits the intestine to be pulled down without tension. The ligature is to be placed above the origin of the arteria sigmoidea (Sudeck's critical point) in order to retain the collateral circulation. The anatomical landmark is the level of the fifth lumbar vertebra above the promontorium (Rubesch). In arteriosclerosis, or when the mesosigma is short, ligature of the superior hæmorrhoidal artery immediately below the origin of the left colic artery does not always, according to Sudeck, prevent gangrene. In such cases it is advisable not to draw down the intestine to the sphincter, but to make an abdominal anus.

GEBELE.

**Crile: Biological Interpretation and Surgical Aspects in Painful Indigestion.** *Lancet-Clinic*, 1913, cix, 94.  
By Surg., Gynec. & Obst.

In certain abdominal lesions, pain is a leading phenomenon. The author postulates that pain is one of the phenomena of a stimulation to motor action, which in turn is to protect the organism against injury and aid in ridding it of injurious substances.

With regard to association of pain with infections, it is found in general that wherever local infection would be spread by muscular action or where fixation of the parts by continued muscular rigidity would be an advantage, there is pain. Wherever the resistance to infection is by chemical processes or wherever it is in such locations that muscular contractions can in no way assist in localizing the disease, pain is absent. The peritoneum is in itself wonderfully equipped to overcome infection, and especially if that infection be localized. A given point of peritoneum may be fixed by holding the muscular abdominal wall still and rigid, and by holding the muscular intestinal wall still and rigid against a large volume of gas, and by quickly throwing out exudation. In the extremes of life, i. e. the infant and the aged, few symptoms of the disease may be shown, the reason being that they have little or no pain and slight if any tenderness or muscular rigidity. The principle involved is the same as that underlying the freedom from pain under narcotics or anesthetics.

The author discusses in detail the diagnosis and differentiation of the main types of painful, chronic indigestion, interpreting many symptoms, especially the painful ones, upon the basis of biological adaptation. Of these there are two great types—infection and obstruction.

Following a conference with his colleagues of the staff of Lakeside Hospital in reference to all of the sections of the abdomen performed by them, the following conclusions were drawn:

Certain lesions of the abdominal hollow viscera cause pain and indigestion; whereas lesions of the solid viscera usually cause no primary pain; lesions



of the hollow viscera causing no pain are rarely benefited by operation; most cases of painful indigestion, if not duodenal or gastric ulcers, are extra-gastric; the cause of the pain is the stimulus to muscular action; pain is a damaging agency to health; acute abdominal pain is usually surgical; these phenomena obey a general biologic law of adaptation; the adequate stimuli of many of them act through the brain; when the brain is disconnected these phenomena disappear, and thus may the mortality and the morbidity be placed measurably further under the surgeon's control.

Abdominal pain, therefore, is associated with infection and obstruction, each a strong stimulus to adaptive visceral activity. Thus a biologic interpretation may be put on the phenomena of infection and obstruction.

FLOYD RILEY.

### LIVER, PANCREAS, AND SPLEEN

**Elperin: A Case of Congenital Defect of the Cystic Duct Due to a Mechanical Cause** (Ein Fall von angeborenem Defekt des Ductus choledochus aus mechanischer Ursache). *Frankf. Ztschr. f. Pathol.*, 1913, xii, 25.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Elperin adds to the 95 cases of the above anomalies found in the literature the case of a female child which died 16 days after birth. The very complete autopsy records show that the liver was greatly misshapen externally. The left lobe was especially large. The gall-bladder was represented by a rudiment 1 cm. long, in which lay a colorless cheesy mass. There were no dilated gall passages in the liver. In the duodenum there was a papilla into which the pancreatic duct opened. On sectioning the region of the papilla serially, a system of canals was found which was clothed with high cylindrical epithelium and evidently represented the developmental center of the absent cystic duct. The branches of the canal ended blindly in the submucosa, in connective tissue which was not inflammatory. The author thinks that the anomaly of form of the liver must be considered in the genesis of the malformation in which the liver is forced upward and the tender cystic duct is markedly compressed. Beneke thinks the malformation can also be produced by constriction of the epithelium of the gall passages from the epithelium of the intestine at this point. Lues was excluded as the etiology of the anomaly because the Wassermann reaction was negative. Other inflammatory processes as a cause could not be demonstrated. The newer investigations in embryology point against a theory of vitium comparationis primæ, since a lack of development of the gall passages would have to go hand in hand with that of the liver. That a defect of the cystic duct has been observed in several children of the same parents, Elperin does not regard as due to congenital lues, but rather to abnormal conditions in the uterus of the mother.

NORDMANN.

**Dugan: Surgery of the Gall-Bladder and Ducts.** *J.-Lancet*, 1913, xxxiii, 36. By Surg., Gynec. & Obst.

The diagnosis of typical gallstones, colic, or obstruction of the common duct is easy, but latent stones and stones pocketed in the cystic duct not entirely closing the same is another story.

Complete obstruction of the cystic or common duct brings on urgent symptoms immediately, but latent stones or stones pocketed in the cystic duct may cause only vague uneasiness or simulate various stomach affections. There is one particular place in the cystic duct very prone to harbor pocketed stones, i. e. the first one-fourth inch of the duct, particularly in women with a narrow costal arch.

Another class that furnishes a fruitful field for mistakes is that wherein very small stones are confined to the pelvis of the gall-bladder in the presence of large quantities of bile, especially if in a young patient with decided and serious appendix trouble to mask the symptoms. The author mentions a case of a young girl operated for appendicitis in which the gall-bladder was examined as a matter of routine. He failed to find any stones, and was about to close the abdomen when his assistant's more sensitive finger discovered a stone low down in the bladder pelvis.

Statistics show 30-35 years as the average age of beginning trouble, but late literature and the author's own experience lead him to place it much earlier.

Although the danger to life is not as imminent in gall-bladder disease as in appendicitis, the very serious sequelæ of neglected cases should cause us to give our patients a more careful prognosis than has been done in the past.

The cases of infection and impacted stones in the common duct with cholemia give a higher mortality by reason of the fact that the cholemia greatly reduces the resisting power and the upper abdomen does not bear infection nearly as well as the lower half.

In view of these very serious conditions in delayed cases, the author concludes that in the past sufficient emphasis has not been given to the danger of delay.

**Nesselrode: Etiology and Pathology of Infections of the Biliary Tract.** *Med. Herald*, 1913, xxxii, 12. By Surg., Gynec. & Obst.

In presenting this paper the author has reviewed much of the experimental work of the various observers of this question. He emphasizes the fact that this pathological condition owes its origin to infection, and urges that in the logical treatment of this condition the treatment of the element of infection is the all essential indication.

After reviewing the evidence in favor of the various suggested routes by which the bacteria may reach the gall-bladder, he offers the following conclusions in favor of the portal vein being the chief route of entry: (1) Adami and Ford have proven that there is at all times a passage of bacteria through



the healthy intestinal wall. (2) It has been proven by Dörr that bacteria introduced through the blood may be demonstrated within a few hours, not only in the urine but also in the bile. (3) The organisms which most commonly infect the gall-bladder are but rarely found in the duodenum. (4) An infection of the biliary tract above a ligated duct could not come by the ascending route. (5) Cases of enteritis have been produced experimentally by the feeding of arsenic, etc.; then some easily recognized organism, as the bacillus prodigiosus, introduced into the bowel, and within a few hours this organism has been recovered by culture from the bile contained in the gall-bladder. If the organism is still virulent after having successfully passed the mucosa of the intestine and the liver, it will give rise to an acute cholangitis or cholecystitis, and the history and symptoms will be those of any acute infection, with the localizing symptoms in the upper right abdomen.

There is one point worthy of mentioning here, and that is that an acute infection in the gall-bladder does not give rise to severe symptoms as an infection of the same virulence elsewhere. This is explained by the absence of lymphatics, and also by the very great elasticity of the gall-bladder.

The intelligent treatment of cholelithiasis presupposes a clear conception of the pathology of the disease, the means of treatment at our command, and the objects attainable by their use. To attempt to dissolve by internal medication a gallstone that is insoluble, or to cause the passage through the biliary ducts of a gallstone when the ducts are impassable to a stone of its size, to attempt to cure supposed gastric symptoms by measures directed to the stomach when the symptoms are caused by adhesions about the gall-bladder,—this is as futile as it is irrational.

**Fink: Symptomatology and Diagnosis of Gallstones; Indications for Surgical Treatment** (Symptomatology und Diagnostik des Gallensteinleidens; Indikationen zur chirurgischen Behandlung). *Prag. med. Wchnschr.*, 1913, xxxviii, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author bases his statements on his experience in 40 cases operated during the year 1912. He divides the cases according to the pathologic-anatomic findings, because he thinks the procedure at operation is only a subjective expression of the indication, and is not the cause for the division. The clinical symptoms can be divided into two groups: those arising from a disease of the bladder and those from the liver and common duct. In the first group the author puts 22 cases, and in the second 18. The author's indication for operation in the first group is occlusion of the cystic duct by a stone, infection of the gall-bladder with its sequelæ, spreading of the inflammation from the bladder to the surrounding tissues, and gallstone colic, which through its persistence and intensity produces a loss of weight and well-being of the patient. He points out three routes of predilection for the spread of gall-bladder inflamma-

tion to the surrounding structures: (1) from the neck of the bladder toward the liver; (2) from the neck of the bladder toward the ligamentum hepatoduodenale, and (3) from the base of the bladder to the free abdominal cavity. He illustrates these groups by characteristic symptoms from his cases. He divides the symptom-complex of the cholelithiasis into six groups: (1) Cases of stone in the bladder, with frequently recurring attacks of great intensity but without precise objective findings; (2) empyema with symptoms of local inflammation; (3) empyema with perforation toward the liver, severe pains, sensitiveness and enlargement of the liver; (4) cholecystitis, with spread of the inflammation to the neck of the bladder and the common duct, with repeated symptoms in the latter and in the pancreas; (5) cholecystitis, with perforation of the gall-bladder into the free abdominal cavity; (6) cholecystitis, with spread of the inflammation to the abdominal organs, constipation and tympanitis, etc. An exact differentiation of icterus due to spread of the inflammation along the ligamentum hepatoduodenale and that due to an occlusion of the common duct by a stone is frequently impossible. The history, repeated attacks of icterus, and the duration of the disease may give some clew. In occlusion of the common duct by a stone, the author performs an ectomy with resection of the bladder and choledochotomy with drainage. The author regards gallstones with patent cystic duct and gall-bladder without infection as suited for medical treatment, i.e., a cure at Carlsbad, since such cases can become quiescent and even be cured. The mortality in operative cases is 7.5 per cent.

BURK.

**Hofmeister: The Methodic Dilatation of the Papilla Duodeni and the Choledochoduodenal Drainage** (Die methodische Dilatation der Papilla duodeni und die Choledochoduodenaldrainage). *Zentralbl. f. Chir.*, 1913, xl, 5.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author has thought out a new device, which he uses in choledochotomy with soft stones, when he is not certain that all fragments have been removed even by careful washing and scraping. (1) The author is not satisfied with a single sounding of the pap. duodeni, but dilates it systematically with urethral bougies (Charr. 22-24). (2) The choledochus is drained with a tube completely filling its lumen and leading all the bile to the exterior. Through this thick tube even several days after the operation one can introduce a fine Nélaton for irrigation. (3) Through the dilated pap. duodeni a tube 6-8 mm. thick is pushed into the duodenum a distance of 4 cm. and fastened in the choledochus incision by means of a long thread. Over this duodenal drain another wide tube is pushed up to the choledochus and at the same time the long choledochus sutures are led through this to the exterior. Next to the tube is inserted an iodoform gauze bag. By this procedure the dilatation of the papilla provided by the operation is preserved. Medicaments



and nutritive material may be introduced without disturbing the stomach, and the bile flowing from the other tube into an outside receptacle may be re-introduced into the duodenum at the time of the meals. Finally the fistula acts as a prophylactic enterostomy to relieve the intestine in the first days following the operation.

BRÜNING.

**Deaver: Pancreatic Lymphangitis and Chronic Pancreatitis.** *J. Am. M. Ass.*, 1913, lx, 1.

By Surg., Gynec. & Obst.

The most important subject occupying the attention of abdominal surgeons to-day has to do with the elucidation of the pathogenesis, the recognition of the symptoms and the discovery of adequate means of treatment of diseases of the pancreas.

It was observed that the pancreas was apt to be involved in disease of the gall-bladder or common duct. In 99 cases of cholelithiasis, which the author operated during 1911, the pancreas was found hard and nodular in 30 instances, in 9 moderately enlarged, in 3 unusually soft, and in one the lesion was more acute and accompanied by fat necrosis. In 45 per cent of these cases, therefore, some alteration of the pancreas had taken place.

Pancreatitis is more prevalent in males, while gall-bladder disease is more common in females. This lack of parallelism arouses suspicion that pancreatitis must be due to other factors than the simple infection by continuity along the bile-ducts to the pancreatic duct. There are three other possible avenues by which infection may reach the pancreas: (1) through the general circulation; (2) by direct contiguity from adjacent structures, and (3) by way of the lymphatics.

1. The rarity of pancreatic involvement in systemic and pyæmic processes, which are relatively so frequent, speaks against this as a common mode of infection. Again, conditions in which the pancreas is found involved are not characterized by bacteræmia, though it may occasionally occur.

2. Infection by direct contiguity occurs most often in slowly perforating ulcers of the stomach and duodenum.

3. The lymphatics, in Deaver's opinion, play a conspicuous rôle in conveying infection to the pancreas. The pancreas, by reason of its retroperitoneal situation, bears a close relation to the thoracic duct and to many trunks which empty into it from the visceral lymphatics.

It must be conceded that in many inflammatory conditions of the abdomen there is a retroperitoneal lymphangitis which is fraught with possibilities of injury to the pancreas lying almost directly in its path. Lymphatics emerge at various points along the surface of the pancreas and run to the regional glands, to neighboring trunks or plexuses. It has been observed in chronic pancreatitis, associated with other visceral inflammations, that the pancreas is often not diffusely affected, but only a portion shows enlargement, induration or nodulation. In gall-bladder disease the head of the pancreas partici-

pates while the tail may entirely escape. If the infection were duct-borne it would be difficult to understand why the gland should not be diffusely affected; if, however, the infection be carried by the lymphatics it should be localized to the segment of the organ supplied by the lymphatics in communication with those carrying the infection.

The author feels certain that lymphatic infection of the pancreas is a fact and that this pancreatic lymphangitis is a forerunner of serious alterations in the parenchyma and stroma of the organ.

Chronic pancreatitis, when it has progressed to the stage of interlobular and interacinar fibrous deposit, is no more curable than chronic nephritis or cirrhosis of the liver. That pancreatic lymphangitis may lead to such a stage is clear, but in its incipency it may be relieved, like lymphangitis elsewhere, by removal of the primary source of infection. As a rule it may be stated that the symptoms of pancreatitis per se in its early stages are secondary in importance to those of the disease on which it depends.

The author expresses his belief that carcinoma of the pancreas is in many instances brought into existence by previous pancreatitis. His reason for this belief is the observation that not a few cases of cancer of the pancreas present a long history of antecedent upper abdominal indigestion suggesting pancreatic inflammation prior to the development of carcinoma.

The treatment of pancreatic lymphangitis consists in the various measures which are efficacious in removing the primary source of infection. Clinical experience shows that the majority of cases of early pancreatic inflammation are closely related to disease of the biliary tract, and are most favorably influenced by measures that tend to restore the biliary passages to a state of health. The great principle of the treatment of biliary disease is drainage. Many cases of mild pancreatitis are completely and permanently relieved by simple cholecystostomy, with drainage continued for from four to eight weeks. This is the procedure which Deaver uses and endorses in all cases in which the pancreas appears to be slightly involved and the possibility of restoring the gall-bladder to a state of health appears good.

While he does not favor, as a general rule, the removal of the gall-bladder, if it can be preserved, yet in cases complicated by pancreatitis he believes that a thickened, functionless gall-bladder should be removed, as its presence invites stagnation of bile, renewal of infection, and a reappearance of upper abdominal lymphangitis. The common duct should be drained whenever the disease is so extensive as to warrant removal of the gall-bladder.

Cholecysto-duodenostomy is reserved for cases in which obstruction of the common duct by the thickened head of the pancreas is almost if not quite complete. Simple drainage of the gall-bladder or common duct often works wonders, and should be performed in view of the lower mortality as compared with a gall-bladder anastomosis.



**Noland and Watson: Spontaneous Rupture of the Malarial Spleen. Report of Three Cases.** *Ann. Surg., Phila., 1913, lvii, 73.* By Surg., Gynec. & Obst.

This is an exceedingly rare condition. From the records of about 30,000 malarial cases admitted to the Colon Hospital, the authors collected only three cases of spontaneous rupture of the spleen. Attention is called to the apparently unquestionable history of absence of traumatism in these cases.

The first case was operated upon ten days after admission. The abdominal cavity contained about 500 cc. of dark fluid blood. The spleen was enlarged to twice its normal size, and a shallow rupture about  $1\frac{1}{2}$  inches in length was found on the diaphragmatic side. Bleeding was stopped by light gauze tampon. This case recovered.

In the second case 1500 cc. and in the third case about 1000 cc. of blood and clots were found. The rupture in both cases was found on the convex surface of the spleen. The second case recovered, and the third died from acute suppression.

The authors go into the symptomatology and diagnosis, and call attention to the fact that the treatment is strictly surgical. They conclude that spontaneous rupture is rare, great splenic enlargement is not essential for rupture, forcible percussion and puncture of the spleen should be avoided: the treatment is early operation. H. W. KOSTMAYER.

#### MISCELLANEOUS

**Hausmann: Visceral Syphilis** (Dieluetische Erkrankungen der Bauchorgane). *Samml. Zwangl. Abhandl. u. d. Geb. d. Verd. u. Stoffw.-Krankh., 1913, iv, 5.* By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After a short historical introduction, Hausmann discusses visceral lues in general. Visceral syphilis can develop, even with severe cachexia, during the first year after infection. Any abdominal organ may become diseased, frequently two or more being affected. Diffuse infiltration causing a fibrous hyperplasia is more frequent than gummata. The venous walls become affected by the granulations (not found in congenital syphilis).

Secondary or tertiary lesions may be found in the oesophagus and cardia of the stomach, often resulting in a stricture. In the stomach proper gummata and ulcers are the more common lesions present, the latter being differentiated from peptic ulcer by its

overhanging border. Diffuse fibrous hyperplasia of the stomach wall, resembling a scirrhus thickening, is also seen. Hypoacidity is typical for a luetic lesion in the stomach. Symptoms of stenosis and blood in the faeces may be absent in gummatous infiltrations of the pylorus. Pain and vomiting may be absent. The characteristic ulcer symptoms are nocturnal pain in the stomach with anacidity. Hausmann thinks syphilis of the stomach is more common than does Chiari.

Intestinal lues occurs in two types; patches of gummatous infiltration with the long axis transverse, occurring mostly in the jejunum and ileum, resulting in stenosis or perforation and fibrous hyperplasia. In 14 per cent of the cases papules appear in the rectum during the secondary stage. They have no connection with anal papules. Gummata of the rectum lead to secondary stenosis and fistula formation. Primary hyperplastic syphilis is also seen here. Stenosis due to gonorrhoea appears as a sharp-rimmed, intensely red scar, while the luetic is a callus and ulcers are usually present. Thus far syphilis of the rectum has occurred only in women.

While tertiary lesions are more often seen in the liver, secondary lesions are possible. Two types of tertiary lesions are common, the diffuse infiltration leading to the typical lobulated liver and gummata.

Diffuse pancreatitis is more frequent than gumma. In 23 per cent of congenital lues the pancreas was found to be affected. The islands of Langerhans are not indurated and the function of the gland need not be disturbed, although fat has been observed in the faeces, as well as sugar in the urine. Pain is often present and an indurated pancreas can sometimes be felt. There may be hyperplasia of the spleen in the secondary stage, and chronic interstitial splenitis or gummata in the tertiary stage. Pain may be present in the region of the enlarged spleen.

Retroperitoneal and mesenteric gumma are more frequent than is supposed, the mesenteric gumma being connected with the small intestine and therefore freely movable. They may cause stenosis when they reach the intestinal wall. Lues of the peritoneum is usually associated with syphilis of some organ. Nodules in the peritoneum are seen in luetic ulcers of the intestine; perihepatitis when liver is affected; perisplenitis when spleen is diseased. P. MEYER.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, ETC.

**Wieland: Rickets and Its Treatment** (Ueber Rachitis und ihre Behandlung). *Schweiz. Rundschau f. Med., 1913, xiii, 313.*

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Wieland finds the cause of the specific changes of the bones in rickets to be a defect of calcareous

deposit, and questions the existence of the halistere-sis claimed by Recklinghausen. Myopathica rachitica also is a specific affection and histologically represents a diminution of the caliber of the muscle fibers and a multiplication of the nuclei, associated with very distinct longitudinal striation; it therefore does not represent atrophy due to inactivity. According to Marfan, hyperplasia of the medulla is



also specific. As of chief etiological importance, Wieland names predisposition in the sense of an hereditary or early acquired general weakness of the individual, and as next in importance, devitalization from deficient aëration, the result of living in crowded quarters. Thereby he differs from Marfan, who looks upon the disease as an affection of the entire hæmatopoietic apparatus. Congenital rickets is denied by Wieland. The greatest frequency of this prevalent disease falls at the end of the first year of life. It is always most easily recognized at those points where growth happens for the time being to be most active: on the skull during the first year of life; later on the thorax, the spinal column, and the epiphyses of the long bones. Rachitis tarda he considers an exacerbation of infantile rickets which has become and remained latent. In therapeutic respects he presents nothing new; however, he points out that operations for distortions should be avoided until one is absolutely assured that recovery is complete.

ERNST SCHULTZE.

**Tennant: The Use of the Blow Torch and Large Autodermic Grafts in the Treatment of Acute and Subacute Osteomyelitis.** *Denver M. Times*, 1912, xxxii, 322.

By Surg., Gynec. & Obst.

Since bone structure will not readily close in about infected areas and cavities, it becomes necessary to substitute some media which will temporarily fill the cavity and act as the framework or scaffolding for the later structural osseous infiltration.

While the Mosetig-Moorhof bone wax medium has been found to be most satisfactory for this purpose, yet it seldom if ever remains in position in the presence of acute or subacute osteomyelitis.

The author has undertaken to overcome these unfavorable features by the adoption of the following procedure.

An alcohol or "Prestolite" blow torch delivering a needle-point flame is directed deep into the septic bone cavity, completely sterilizing everything with which it comes in contact. The infected margins of the soft tissue as well as the cavity are treated in like manner, and after the wax has been packed into the cavity, an autodermic graft is placed, and over all a rubberized open mesh dressing is laid and bandaged into place. This last procedure makes it possible for drainage and easy access to the wound for the dressings, without distorting the margins of the graft.

The wax is put up in sterile collapsible metal tubes, which are dropped into a water bath of 100° F. just before using.

**De Nancrede: A Case of Metastasis in the Femur of Normal Fetal Thyroid Tissue.** *Phys. & Surg.*, 1913, xxxv, 19.

By Surg., Gynec. & Obst.

Cases of this kind are usually diagnosed as malignant tumors, either a primary sarcoma or a secondary carcinoma. Often a histological examination

of tissue removed at an operation is not made, and so there are probably many cases of non-malignant bony growths which are never correctly diagnosed, even after they are removed by operation. The Germans have come to view with suspicion all bony growths which occur in regions where goiter is common. Often a rigid examination of the thyroid will reveal a nodular condition.

The case in hand came to the hospital because of a fracture which had occurred six months previously and which had never healed. The fracture was located above the knee. The trouble began four months previous to the fracture with pain in the left heel followed by swelling. The pain and swelling passed gradually up the limb to a point slightly above the knee, where a nodular mass formed the size of a biscuit. The fracture resulted from a slight twisting of the leg as the patient fell. The injury was accompanied by severe pain in the limb.

The limb was flail-like and was amputated. A histologic examination of the tumor resulted in a diagnosis of metastasis of fetal thyroid tissue in bone, only locally malignant.

Cases of this kind, which cannot be cured by any retentive apparatus applied to the bone, necessitate only a very low amputation, and not the high amputation which is necessary when the more malignant types of bone tumors are present.

JAMES H. SKILES.

**Schwartz: Giant Cell Sarcoma at the Lower End of the Femur; Resection of the Knee; Good Results at the End of Eighteen Years; No Recurrence; Pseudarthrosis; Good Use of the Leg While Walking** (*Sarcome à myélopaxes de l'extrémité inférieure du fémur; résection du genou; résultat au bout de 18 ans; absence de récidive; pseudarthrose; march très-facile*). *Rev. d'orthop.*, 1913, iv, 71.

By Journal de Chirurgie.

The above title is the history of a very interesting case in a few words. Two points of interest should be noticed in the writings of Schwartz:

(1) The fact that there has been no recurrence of the tumor in eighteen years proves to us that we can cure these giant cell sarcomas by simple resection.

(2) That the patient has good use of the limb while walking, that he is able to use the leg freely and stand upon it for hours with no difficulty (he stands by the hour at his trade), and that he has free mobility at the knee, which is actually of better service than before.

ALBERT MOUCHET.

**Bätzner: The Trypsin Treatment of Surgical Tuberculosis.** *Practitioner*, 1913, xc, 203.

By Surg., Gynec. & Obst.

Acting on the belief that the treatment of surgical tuberculosis with proteolytic ferments would aid in the resolution of the lesions, the author has carried on investigations to determine the value of such treatment clinically. His method consists in the injection subcutaneously of a sterile 60 per cent



solution of trypsin in glycerin. The dose varies from 1 to 2 cc., diluted with one to ten parts of physiological salt solution. Injections are made at intervals of 2 to 7 days, preferably into and about the site of the lesion. He states that trypsin diffuses very slowly through the tissues into which it is injected, and that the action on normal tissue is practically nil.

Injections into tuberculous tissue are followed by slight smarting pain, occasionally a rise in temperature, and local signs of inflammatory reaction. Especially in closed lesions, violent inflammatory reactions occur bearing all the characteristics of acute inflammatory phlegmon, intense smarting, and, a few hours after injection, rigor and high temperature. These symptoms disappear in from 24 to 28 hours, while the swelling may continue from 4 to 6 days. In cases of large closed abscesses after one or several injections, the pus is said to become serous and frequently blood-stained, accompanied by shrinking of the walls of the abscess, followed by cicatrization.

Microscopically the author has determined the addition to the lymphocytes and detritus of the tuberculous pus, of polynuclear leucocytes, eosinophiles and red blood cells, and a decrease of the lymphocytes. He concludes from this that the blood has gained free access to the lesion by absorption of the thickened torpid tissues surrounding it, and that "under the influence of the ferment injection, a vigorous reaction takes place in the tuberculous focus; and ensuing hyperæmia, cellular infiltrations, and proliferations lead to a transformation of the substance and the structure of the pathological tissue and to necrosis of the fungoid masses without impairing in any way the vitality of the healthy parts."

From an abundance of material he cites four specific cases of advanced tuberculosis of the ankle, several with ulceration and sinuses leading to bare bone, cured in 1 year and 9 months, 14 months, 2 years, and 1 year and 8 months respectively. The X-ray of one of these he describes as showing "extensive destruction of the calcaneus and astragalus and of epiphyses of the tibia and fibula." He describes the X-ray taken after treatment as showing "complete restitution of bone." The number of injections in these cases were 50, 17, 31, and 40. He also reports the disappearance of a tuberculous abscess the size of a child's head, after two aspirations and 11 trypsin injections. Suppurating sinuses, and especially superficial tuberculous ulcers, he believes are very amenable to treatment. Among the general effects of the treatment he notes improvement in general physical and mental condition and unusual improvement in appetite. He advises the treatment in all surgical tuberculosis, especially those with abscesses or sinuses. While not presenting the method as a finished therapeutic procedure, he believes that in view of his excellent results the method deserves further investigation.

F. J. GAENSLER.

**Butzengeiger: Experiences with Mesb  in the Treatment of Surgical Tuberculosis** (Erfahrungen mit Mesb  in der Behandlung chirurgischer Tuberkulosen). *M nchen. med. Wchnschr.*, 1913, lx, 128. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

As a result of the publication of Heermann and Spangenberg, 7 cases of chronic fistulous bone tuberculosis were treated with 'mesb . Mesb  was applied locally either pure or as a 50 per cent salve. In all cases more or less extensive surgical procedures had been used and had left fistul . Two cases healed after 10 weeks' treatment with mesb  and remain closed at the present time, 2 months later. One case showed, after the application, a marked local reaction and rise of temperature to 39 . In most other cases severe pain and increased secretion were noted. This is regarded as the specific action of this remedy on the tuberculous processes and hence it is thought it contains specific anti-tuberculous bodies.

HAGEMANN.

**Chalier and Naurin: Primary Benign Tuberculous Pyarthrosis without Bone Lesions** (Sur une forme b nigne de pyarthrose tuberculeuse primitive sans l sions osseuses). *Rev. d'orthop.*, 1913, iv, 41. By Journal de Chirurgie.

Under this name, Chalier and Naurin describe the "articular cold abscess," and cite three cases in which such a true complete pyarthrosis was demonstrated, not only by clinical examinations but by arthrotomy or aspiration. The tuberculous nature of the lesions was confirmed by the laboratory findings. As to the articular lesions, the one case which was operated showed that the synovial membranes were alone involved, whilst the articular cartilages and the bony epiphysis showed not the slightest alteration. The clinical characteristics of this variety of tuberculous pyarthrosis are, first, the almost absolute integrity of the articular functions, and secondly, the minimum constitutional effect. This affection may hence be considered relatively benign. Fixation with or without accompanying injection of modifying solutions into the joint is the treatment of choice unless such acute symptoms should supervene as those which in this case led Jabaloy to perform an arthrotomy.

ALBERT MOUCHET.

**Berry: The Classification of Arthritis.** *Surg Gynec. & Obst.*, 1912, xvi, 54.

By Surg., Gynec. & Obst.

The classification of injuries and diseases of the joints has always been more or less confusing, and the confusion has occurred mainly in the classification of the chronic diseases.

Thus Goldthwait classifies the chronic diseases of the joints into infectious, atrophic, and hypertrophic arthritis. Under the head of hypertrophic arthritis he groups such diseases as Heberden's nodes, malum cox  senilis and spondylitis deformans.

Jones makes only two classes, rheumatoid ar-



thritis (corresponding to Goldthwait's atrophic arthritis) and osteo-arthritis (corresponding to Goldthwait's hypertrophic arthritis).

Nathan has a classification in which senile osteo-arthritis corresponds to Goldthwait's hypertrophic arthritis or Jones' osteo-arthritis, and metabolic osteo-arthritis corresponds to Goldthwait's atrophic arthritis or Jones' rheumatoid arthritis. He groups both diseases, however, under the head of trophic osteo-arthritis.

According to the author, the classification of joint diseases which seems to offer the least opportunity for confusion is a classification based upon known etiological and anatomical factors, and is as follows:

1. Traumatic: (a) Traumatic arthritis, (b) traumatic osteo-arthritis.
2. Infectious: (a) infectious arthritis, (b) infectious osteo-arthritis.
3. Trophic: (a) Trophic arthritis, (b) trophic osteo-arthritis.

In the above classification the diseases known as Heberden's nodes, *malum coxae senilis*, *spondylitis deformans*, osteo-arthritis (Jones), etc., are classified under the head of traumatic osteo-arthritis, because their initial lesion as shown by the X-ray corresponds to that of an osteo-arthritis caused by known trauma. In like manner, the disease known as rheumatoid arthritis (Jones) is classified as a trophic osteo-arthritis, because the X-ray findings correspond to those in diseases known to be trophic in origin. The author believes that all forms of arthritis can be placed in the present classification according to their etiology and the anatomical changes.

**Axhausen: Nature of Arthritis Deformans** (Ueber des Wesen der arthritis deformans). *Allg. med. Zentrbl.*, 1913, lxxxii, 47.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

According to the histological and experimental studies of the author, arthritis deformans always caused necrosis of the cartilage. He found that both necrotic bone and cartilage displayed an active reaction on the surrounding healthy tissue. The cartilaginous tissue soon commenced to undergo active proliferation and to replace the necrotic tissue which was killed by electric current in his experiments. The most characteristic change took place in the bone marrow near the epiphysis. Under such experimental conditions the necrotic cartilage frequently took on the typical pathological picture of arthritis deformans. According to Axhausen, the necrotic changes in the cartilage are typical physiological changes seen in old age. The symptom-complex is activated by it and is closely related to the amount of deformity and change it produces.

E. O. P. SCHULTZE.

**Dardel: Gonorrhœal Rheumatism in Arthritic Subjects.** *Med. Rec.*, 1913, lxxxiii, 150.

By Surg., Gynec. & Obst.

Dardel reviews briefly the history and course of gonorrhœal rheumatism, and discusses at some

length the treatment. In acute cases attended by much inflammation, he quotes Chevrier as obtaining favorable results with injections into the joint of 20 to 50 micrograms of radium salts. In chronic cases with joint deformities, Dardel advises injections of thiosinamin or fibrolysin; 2 cc. of the latter are used daily for a fortnight, together with massage and manipulation of the joint. He asserts that this treatment is capable of yielding good results.

CHARLES M. JACOBS.

**Pürckhauer: Injuries of the Ligamenta Cruciata of the Knee Joint** (Ueber Verletzungen der Ligamenta cruciata des Kniegelenks). *München. med. Wchnschr.*, 1913, lx, 73.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Purckhauer reports 3 significant cases, two of which he was able to observe for a long time. The mechanism of this injury has been studied chiefly in the Röntgen era and is fourfold: (1) Hyperextension; (2) hyperflexion, when at the same time there is a powerful force acting on the knee; (3) hyperextension and simultaneously high-grade outward abduction; (4) inward and outward rotation by great violence, usually with associated severe injury to the lateral ligaments and capsule. The characteristic late symptom is the possibility to luxate both actively and passively from before backward, without any lateral movements and with slight impairment of function. In fresh cases suturing the torn ligaments is recommended. In late cases when the functional disturbance is not too great, the knee is best immobilized in order to present the possibility of subluxation.

VORDERBRÜGGE.

**Breus: Etiology and Genesis of Otto's Protrusion of the Acetabulum** (Zur Aetiologie und Genese der Ottoschen Protrusion des Pfannenbodens). *Wien. klin. Wchnschr.*, 1913, xxvi, 167.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In this condition a local destructive inflammation of the bony floor of the acetabulum takes place, whereby only a thin layer of inflamed periosteum persists between the pelvic cavity and the joint. The head of the femur pushes on the periosteum, and after the inflammation has subsided a new bony acetabulum develops. The head of the femur, bulging into the pelvic cavity, remains in the position it assumed during the height of the disease. Of the 13 cases, 4 occurred in men, and in 6 of the 9 women it was bilateral. Gonorrhœa probably causes the arthritis, and a superimposed pregnancy is most likely a predisposing factor in females.

HANNES.

**Ryan: Muscle Degeneration and Osteoma.** *Illinois M. J.*, 1913, xxiii, 71.

By Surg., Gynec. & Obst.

This article embraces a review of the literature upon the subject of myositis ossificans traumatica, with a review of 4 cases that have come under the



observation of the author. These cases were at one time considered rare, but since the advent of the X-ray they have been found rather frequently. There are upward of 500 cases that have been reported in the literature.

Several theories are held as to the causative factor in the production of myositis ossificans traumatica. Busse and Blecker support the theory that it is caused by an inflammatory process. The theory that it is a true osteoma has a great many supporters. Nicoladoni believes that the condition is due to trophoneurotic changes. A few observers believe that the synovial fluid liberated from the joint by the injury may have some unusual action upon the injured tissues. But this view does not seem correct when we remember the large number of cases where a joint has been opened by accident or intent and no osteoma has formed. The usual theory of misplaced embryonal tissue is held by several observers.

The pathology, according to Virchow, is due to muscle degeneration. He considers the growth on the border line between an osteoma and an inflammatory process, and he believes the changes occur in and are derived from the muscle cells and not from periosteum or from bone or connective tissue. Almost all observers are now unanimous in the belief that the periosteum and connective tissue produce the bony condition and that the presence of the muscle tissue is merely accidental.

The diagnosis is made on the history of trauma, the persistence of a stony hard swelling, tenderness on pressure and limitation of motion long after the limb should have recovered its normal range of movements. The X-rays are of immense value and should be taken in at least two planes.

The treatment is conservative and radical. The conservative treatment is adopted early and consists in rest, aspiration of the fluids in excess, and hot or cold applications. When the X-rays show a bony growth and the process is at a standstill, removal of the bony growth is the best procedure. Removal of muscle surrounding or connective tissue attached to the growth is advised and if the growth is subperiosteal or attached to the periosteum, the removal of the periosteum is also recommended.

Four cases are reported in the article. These were all cases where the region of the brachialis anticus was the part affected. Two of the cases were operated upon with good results. The other two cases could not be followed, as one refused operation and the other left the hospital and failed to keep his promise to return. Both the cases operated upon showed a marked shadow with the X-ray; operation showed the growth to be in one case in the tendon of the brachialis anticus muscle, and in the other case the whole mass was beneath the periosteum and proved to be a simple osteoma, both in macroscopic and microscopic appearances.

JAMES H. SKILES.

## FRACTURES AND DISLOCATIONS

**Grégoire: Pathogenesis and Pathological Anatomy of Recurring Dislocation of the Shoulder** (Luxation récidivante de l'épaule; anatomie pathologique et pathogénie). *Rev. d'orthop.*, 1913, iv, 15.

By Journal de Chirurgie.

The author points out that recurring luxation of the shoulder differs from the ordinary traumatic dislocation which appears in a normal articulation as the result of a violent traumatism in that it often follows an insignificant traumatism owing to the fact that it occurs in a congenitally malformed articulation. The articular malformation which predisposes to recurring dislocation consists first in a thinness and an abnormal laxity of the capsular tissues. The capsulo-periosteal separation described by Broca and Hartmann is, according to the author, merely the unhealed rupture following an extracoracoid luxation, and cannot be invoked as the recurrence. The separation of the capsule from its insertion on the glenoid border, which has been described by Quénu, is perhaps only this same lesion of Broca and Hartmann after cicatrization. The author bases his statement that the thinness and relaxation of the capsular tissues is congenital upon personal observation and the observation of many other authors. Torta's recent thesis on the voluntary subluxation of the shoulder is an agreement with the author's statement.

Another factor consists in the malformation of the head of the humerus. There is a defect in the posterior portion of the head of the humerus, as if a piece like the segment of an orange had been ablated. This defect, which has been noted by many authors in cases of recurring dislocation of the shoulder, is due neither to traumatic depression nor to local friction, but according to Grégoire is a congenital malformation.

ALBERT MOUCHET.

**Ruth: Fracture of the Femoral Neck: Its Anatomic Treatment.** *Albany M. Ann.*, 1913, xxxiv, 1.  
By Surg., Gynec. & Obst.

One third of all fractures of the aged are of the femoral neck. Reports from over 200 cases treated by the "anatomic method" prove that good results are as certainly attainable in the treatment of this as of any fracture of the femur. Fowler's and Keen's illustrations of the method are complicated and misleading.

The treatment is in reality very simple and can be applied by anyone understanding the objects sought, viz., overcoming by longitudinal and lateral traction all the displacing influences of (1) the vertical, oblique, and internal pull of the muscles crossing the fracture line, (2) the weight of the limb, and (3) eversion by the rotators.

Enough traction must be applied longitudinally (usually 15 to 30 lbs.) and laterally at the upper end of the thigh (usually 10 to 20 lbs.) to overcome all shortening and flattening of the hip. The lateral



pulley should be high enough to enable the lateral traction to overcome eversion of the foot.

The illustrations indicate the proper application of the method, which will always make the patient comfortable and which will insure union in those having strength enough to survive the shock of the injury and who live four weeks thereafter.

Patients may be raised to a sitting posture daily, as required for cleansing and rest, and to avoid the danger of hypostatic pulmonary congestion so important in the very aged and feeble. By flexing



Fig. 1. Illustrating effect of longitudinal and lateral traction with the resultant force acting in line with the neck of the femur. (Ruth.)

the sound leg the hips can be raised for use of the bed pan without pain, as none of these movements will disturb the fragments or interfere in the least with union.

G. W. Phillips first used this method in 1867. T. J. Maxwell improved the method but did not use it until 1871. The author makes this correction because he had supposed Maxwell was the author of the method and had given him credit for 22 years in his teaching and writings.



Fig. 2. Showing the proper position of the bed tilted with the injured side and the foot of the bed raised enough to cause the body weight to make the required counter-extension. For an adult male tolerably muscular the weight at the foot should be from 20 to 30 pounds at the first, and the lateral pull should be usually about two-thirds as much as that used on the foot. The use of this apparatus is equally applicable to the treatment of all cases of tuberculosis of the hip joint when they must be confined to the house or to bed, as it places the joint in absolute rest and avoids all muscular spasm. Proper adjustment of the spreaders at the foot and in the lateral pull will avoid all injury to the malleoli and oedema of the limb from compression of the long saphenus, while proper adjustment of the lateral pull will regulate the degree of inversion or eversion. (Ruth.)

**Patel and Viannay: Complete Subastragaloid Internal Dislocation of the Foot without Perforation of the Skin** (De la luxation sous-astragalienne complète du pied en dedans sans perforation de la peau). *Rev. d'orthop.*, 1913, iv, 1.  
By Journal de Chirurgie.

Patel and Viannay report three personal observations of this traumatic lesion, together with a case of Gayet and Deber which has been published in Walther's thesis (*Thèse de Lyon*, 1911-12). Under the name of subastragaloid internal luxation of the foot they describe a displacement in which the foot pivots internally so that the plantar surface becomes median, while the tibia and fibula holding the astragalus between them form the lateral prominence. These luxations seem to depend upon a lessened resistance of the interosseous ligament. The condition has sometimes followed a very slight traumatism. The swelling may mask the clinical signs. Bimalleolar fracture should, however, cause no difficulty in the differential diagnosis and mediotalar luxation is likewise easily eliminated. In doubtful cases radiography will settle the diagnosis. Reduction should be carried out at once, lest the prominence of the astragalus lead to perforation of the skin or lest compression of the vasculo-nervous bundle on the internal aspect of the ankle compromise



the vitality of the foot. Under general anæsthesia the reduction is usually easy. However, certain complications, such as luxation of the extensor tendon or the ensiform ligament, render reduction impossible without an open operation or astragal-ectomy, to which latter the authors give their preference.

ALBERT MOUCHET.

### SURGERY OF THE BONES, JOINTS, ETC.

**Bartlett: A Consideration of 76 Operations in Which Lane Bone Plates Were Used.** *Boston M. & S. J.*, 1913, clxviii, 149.

By Surg., Gynec. & Obst.

Bartlett comments on the conviction as to the value of the Lane method of treatment which is gained by witnessing the operative procedure, especially as carried out by its author, but adds that its actual value can be established only by a study of the end results. In his own case this has served to dampen his early enthusiasm, so that he is doing less of this work now than at any time since his visit to the Lane clinic 2½ years ago.

In the 76 cases upon which he has operated, the mortality was 3.9 per cent. Only 38 cases could be traced for a period ranging from 2 to 29 months. Of this number 22 were simple and 16 compound fractures, 4 of the latter being suppurative at the time of operation. In 13 cases the plates had to be removed, 4 of them being simple and 9 compound fractures. Seven of the 38 cases are considered failures, and are given in detail: 1. A fracture of the femur in a 50-year-old alcoholic woman; death after 10 days from delirium tremens and infection of the wound. 2. Fracture of clavicle in a 40-year-old alcoholic male; death from post-operative pneumonia. 3. Compound fracture; both bones of the leg became severely infected and the plate loosened up, requiring removal 3 weeks later. 4. Compound fracture of femur followed by infection, which necessitated removal of plate after 3 months, after which the fracture healed. 5. Compound fracture of tibia from street-car accident; plated immediately; death in 3 days, with high fever and probable fat embolism. 6. Compound fracture of both bones of forearm; radius plated immediately, but amputation necessary one week later because of gangrene. 7. Compound fracture low in the tibia; plated unsuccessfully elsewhere; a second plate applied, but amputation was finally necessary after weeks of suppuration. Satisfactory end results were obtained in the other 31 cases. However the author takes a very conservative stand, and warns against the employment of the procedure except in carefully selected cases.

D. B. PHEMISTER.

**Gazzotti: Experimental Contribution to the Study of Cuneiform Osteoplastic Grafts** (*Contributo sperimentale allo studio dell'infibulazione*). *Polichin. Sez. chir.*, 1912, xix, 536.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Under aseptic precautions Gazzotti resected the distal epiphysis of the femur and the proximal

epiphysis of the tibia of rabbits which had just been killed and transferred them to other rabbits by grafting the pieces, as a central wedge, in the resected and excavated medullary spaces. He then made a histological examination of these 33 test animals, 2 to 15 days after the transplantation. The results at which he arrived do not differ materially from those obtained by other authors (Axhausen, Barth, and Frangenheim). On the receptor bone he observed regressive processes (necrosis and absorption), taking place in a certain sequence. He also observed neoformation of osteoid and osseous tissue and necrosis and absorption of the excess of newly formed elements. On the implanted material, he noted regressive processes to the extent of complete disappearance of the implanted bone elements. Proliferation on the part of the osteoblastic layers was intermittent and slight, resulting in very limited production of osteoid and osseous tissue. The invariable outcome of the experiments was necrosis and complete absorption of all the newly formed material. Unlike Axhausen and Barth, Gazzotti was altogether unable to find living bone substance in the vicinity of the periosteum. This disintegration of the solid elements of the implanted bone is traceable to the interruption of circulation and of the nerve connections. The less differentiated elements of the periosteum and the medulla, on the other hand, retained their vitality and power of proliferation as they were nourished by the fluids circulating in their vicinity. Gazzotti refers to the favorable effect (noted by Axhausen) of a longitudinal incision made into the periosteum of the implanted bone for the purpose of facilitating the access of the fluids. Reasoning by analogy from this fact, we should expect to find that disintegration of the solid elements begins in the deeper layers. This, however, is not the case, for necrosis begins at the exterior surface and the interior surface (facing the medulla) of the diaphysis and from there spreads to the deeper layers. Disturbances in circulation can, therefore, not be held accountable for the disintegration of the newly formed osseous elements of the implanted material. As the microphotographic slide demonstrates, very vigorous unions were formed with the vascular system of the receptor bone, at least during the early stages, so that nutrition must have been more than sufficient; yet regressive processes had even then begun to develop in the newly formed bone tissue. At a later stage, it is true, the medulla had been transformed into fully developed connective tissue, poor in blood-vessels, and the entire newly formed bone tissue had undergone necrosis. Sclerosis of the parent tissue might therefore have influenced the final changes, but it could not have affected the regressive changes in the newly formed bone elements, as these had already set in at an earlier stage. So Gazzotti concludes that the absence of functional stimulation is to be held chiefly accountable for the necrosis of these newly formed bone elements.



Certain favorable influences, however, are indeed exerted by the implanted material on the osteoblastic elements of the receiving bone. It stimulates them in the manner of foreign material, introduces osteoblastic substance capable of proliferation, as well as lime salts and other products which result from the breaking down of the implanted bone. These favorable influences must, however, be checked off against unfavorable influences, of which Gazzotti names the following: (1) Regressive processes take place in the receptor bone (necrosis and absorption from a constant focus in the diaphysis) which counterbalance the favorable osteoblastic stimulation produced by the implanted wedge. (2) Bone formation on the part of the specific elements of the implanted bone is intermittent and ultimately these elements are completely absorbed.

On the basis of his histological results Gazzotti thus arrives at certain conclusions respecting the suitability of bone grafts as a method of treating pseudarthroses and fractures with retarded formation of callus. He believes that in pseudarthroses and in cases of retarded formation of callus, the nutritive conditions of the bones are more unfavorable than those which obtain in perfectly healthy test animals. The regressive processes in the receptor bone will therefore of necessity be much more marked than in these experiments. Hence we have no certain assurance that an increase in osteoblastic reaction on the part of the receiving bone will be produced by the wedge. At the same time, moreover, regressive processes are taking place and the bloody intervention itself very probably has an unfavorable effect on union of the fractures. Because of these considerations and on account of the complete absorption of the implanted material and of all the tissue elements newly formed by it, the value of the method of implantation as a treatment of pseudarthroses and fractures with retarded formation of callus must be put down as considerably lower than has been done hitherto. WITTEK.

**Taylor: Restoring Mobility after Bony Ankylosis of the Joints.** *Penn. M. J.*, 1913, xvi, 294.

By Surg., Gynec. & Obst.

The author presents a paper on the use of wax mixtures after arthrolysis for the prevention of the reformation of ankylosis. He briefly reviews the various methods previously employed for restoring mobility after ankylosis, and divides them into six groups, as follows: 1. Brisement forcé. 2. Interposition of foreign non-absorbable substances. 3. Muscle and fascial flap with nutritive pedicle. 4. Heterogeneous fascia or membrane (from other animals). 5. Autogenous or homogeneous fascia or membrane without nutritive pedicle (fascia lata, Thorn's method). 6. Absorbable animal substances — waxes, amyloids, colloids, gelatins and fats (Taylor's method).

Groups 1 and 2 are obsolete. Groups 3 and 4 present at times one or more of these objections, following the operation: length of operation, pain,

fever, suppuration, sloughing, sinus formation and reformation of ankylosis.

Prognosis as to mobility after operation depends on joint involved, degree and nature of involvement, causative disease or condition, and changes in adjacent parts.

Atrophy, osteoporosis, deformed articular ends, thickening of capsules, shortening of ligaments, tendons, muscles, etc., influence results. Acute cases or active chronic cases are not suitable for stereo-arthrolysis.

In June, 1911, the author began laboratory and animal experimentation to determine a liquid, absorbable animal substance that could be sterilized and injected by syringe between the denuded ends of bones entering into the proposed new-made articulation, and that would solidify immediately at body temperature in such a manner as to prevent contact for some six or eight weeks before absorption. The temperature on injection must be below scalding point, and the congealed resultant was not to be absorbed before the denuded bone ends healed.

Fatty, waxy and gelatinous substances were experimented with in combination and in various proportions to determine melting and congealing points, and the rapidity of absorption was tested by injections subcutaneously in rabbits. Yellow wax and lanolin, or other animal fat mixtures melting at 120° to 135°, were chiefly used in the 9 cases reported. These were four knees, four hips and one elbow operated on for the relief of ankylosis, and in none of them did re-ankylosis occur.

The best results were 60° of motion in flexion in a knee, 75° in a hip, and full range of motion at the elbow.

The author advocates a flap of skin to cover the incision into the capsule of the joint, not using more of the wax mixture than is necessary to cover the denuded bone ends, using a wax mixture diluted as much as possible, i.e. as much fat as possible, to favor rapid and complete absorption; and thorough shaping of the articular ends by chisels and gouges to approach nature in appearance at the time of the operation, and not leaving too much to Wolff's Law, as yielding the best results.

In defense of his method the writer claims the prevention of the reformation of bony ankylosis, the absence of pain and fever, and rapid ability to move the joint more or less voluntarily. The wax acts not only as an anæsthetic cushion between the denuded bone ends, but as a hæmostatic plug to oozing bone vessels.

**Galloway: Observations of Tendons Transplantation Operations.** *Surg., Gynec. & Obst.*, 1913, xvi, 84.

By Surg., Gynec. & Obst.

Galloway describes at length seven operations for the transplantation of tendons for varying orthopedic conditions. He lays down six rules for success: First, perfect asepsis; second, attachment of the transplanted tendon to the bone or periosteum; third, tendon must be stretched moder-



ately tight before being secured; fourth, it must be fastened with suture material that will maintain its hold for several weeks; fifth, a covering of subcutaneous tissue should be brought over it before the skin is sutured; sixth, ample time (about six to eight weeks) should elapse before the transplanted tendon is allowed to functionate.

The first group he describes is for the transplantation of the extensor proprius pollicis to the neck of the first metatarsal. This is to transfer the action of this muscle from the movable toe to the relatively fixed metatarsal, to make it a powerful dorsal flexor as well as an inverting force to the foot. Although he does not state in what class of cases he uses this operation, it is evidently for those cases of infantile paralysis in which there is an inversion and flat foot.

Group "B" consists of transplantations of the peronei to the inner side of os calcis, which he suggests as a helper to Group "A" in cases of paralytic valgus. In some cases he does an arthrodesis of the astragalo-scapoid articulation.

Group "C"—transplantation of the outer half of the tendo achillis to the inner aspect of the heel. In this operation, where the transplantation of the peronei does not seem best, he splits the lower two or three inches of the tendo achillis, detaches the outer half with a thin layer of interlining bone, draws this through a tunnel created anterior to the inner half of the tendon, and attaches it to the inner side of the heel. He states the cases demanding this operation are chiefly those in which the tendo achillis is slightly shortened so that the foot cannot be dorsally flexed to the normal extent. He holds that in these cases this tendon produces a valgus, and it is usually necessary to lengthen the tendon by a tenotomy by Beyer's method, the transplantation being done about three weeks later.

Group "D"—transplantation of the tibialis anterior to the outer side of the tarsus. This operation he does in cases of paralytic varus. He obtains the attachment by drilling the fifth metatarsal and drawing the tendon through it, detaching the tendon as far forward as its insertion extends

and dissecting it free to this point, as it is usually short at best.

Group "E" is for the transplantation of the biceps or semimembranosus to the patella. He does this operation when the hamstring muscles are intact but the extensor quadriceps are paralyzed, to give support to the knee and avoid using an apparatus to prevent this joint giving way. If possible he chooses the biceps for this operation, but if not possible he uses any of the flexor group.

In Group "F" the author treats of the transplantation of the pronator radii teres to convert it into a supinator. He states that he has performed this operation a number of times and found that it has lessened the resistance to supination, but he has never been able to satisfy himself that the result has ever become an active supinator. He thinks the improved condition of the arm results quite as much from the muscle being completely shorn of its power to act as a pronator.

Group "G" is for the conversion of the flexor carpi radialis and flexor carpi ulnaris into extensors of the wrist. The author states that this operation is nearly always performed in connection with the transplantation of the pronator radii teres, as a secondary operation done two or three weeks afterwards. The insertions of the flexors are exposed through short incisions directly over them on the front of the arm, tendons are detached with a stout bone knife and cleared for a couple of inches above the wrist. After exposing the lower part of the extensor carpi ulnaris through an incision behind the lower part of the ulna, the skin is tunneled and the end of the flexor drawn through and stitched as low as possible to the tendons of the extensor. The flexor carpi radialis is carried to the back of the wrist and attached to the extensor carpi radialis longior. He states that although the transplanted flexor may not be reasonably expected to act as extensors very actively, the advantage of depriving them completely of their power to flex the wrist is a distinct advantage; and he states that in his own cases he has seen the flexors exert a positive extending action.

P. B. MAGNUSON.

## ORTHOPEDIC SURGERY

### DISEASES AND DEFORMITIES OF THE SPINE

**McGlannon: Ankylosis of the Spine.** *Old Dominion J. M. & S.*, 1913, xvi, 1. By Surg., Gynec. & Obst.

The author states that inflammatory projections from pre-existing bone (spondylitis deformans), ossification of the soft tissues (spondylose rhizomelique), or regenerative formation repairing bone destruction, lead to ankylosis of the spine. In describing the pathologic process of each form, he emphasizes the fact that it is important to distinguish one from the other, since each requires a method of treatment essentially different. C. M. JACOBS.

**Doerr: Static Scoliosis** (Beitrag zur statischen Skoliosefrage). *Ztschr. f. orthop. Chir.*, 1913, xxxi, 1. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The accounts of the frequency of occurrence of static scoliosis vary greatly. Some authors are of the opinion that functional change in the development of the individual organism, that is from the standpoint of ontogeny, is an absurdity. Because of this diversity of opinion Doerr reviews the cases of scoliosis of Langeschen's clinic in München. He made a careful investigation as to the number of cases of static scoliosis.

Static scoliosis is due to a difference in the length



of the legs, and in order to confirm the diagnosis measurement of the length of the lower extremities is absolutely necessary. To do this the author used one of Engerhard's apparatuses, slightly modified by himself. All measurements were repeated three times, on different days, so that it was impossible to make mistakes in measurements. An X-ray plate was also taken from every patient. This included both the pelvis and the upper part of the thigh in order to confirm with the plate a coxa vara or coxa valga. The X-ray plates were taken with the limb rotated inward for 20 to 30 degrees. The investigations were made on 220 cases of scoliosis. Out of these 220 cases, the author observed 14 cases with static form of scoliosis. This gives us an equivalent of about 7 per cent. Schyktelz also found that the frequency of static scoliosis was approximately 5 per cent when calculated from all the cases of scoliosis in the literature. These investigations showed further that the frequency of static scoliosis is without question fairly constant, and that it is much more common than many writers seem to think. An examination of the entire static region, that is the lower extremity including the pelvis, is absolutely necessary. BIBERGEIL.

**Auer: Spastic Paraplegia, with Cutaneous Reflex of Defense Occurring in Pott's Disease.** *J. Am. M. Assn.*, 1913, lx, 269. By Surg., Gynec. & Obst.

In 1899 Babinski described a form of spastic paraplegia due to an organic lesion but without degeneration of the pyramidal tract, the chief characteristics of which were contraction of the limb in flexion and marked exaggeration of the cutaneous reflexes, the tendon reflexes being usually not exaggerated and often diminished. In the two cases of spastic paraplegia reported, the one occurring in an early, the other in a late Pott's disease, it was observed that cutaneous stimulation of the affected member by pin-prick caused a rapid withdrawal of the limb in flexion. This phenomenon is not only found among the earliest signs, but may also be present with complete loss of sensation to touch, pain, and temperature, abolished reflexes, and paralysis of the affected side. That the cutaneous reflex of defence is a result of a compression is proven by its disappearance in one case after palliative removal of the pressure in; the other, after operation. Its occurrence has been reported in sarcomatous meningitis, multiple sclerosis, Friedrich's ataxia, and Pott's disease. The reported cases show that spastic paraplegia with the cutaneous reflex of defence is often due to a gradually progressing compression myelitis, and is of importance in the differentiation of the spastic paraplegias.

**Ebers: Case of Operated Spinal Cord Tumor** (Fall von operierten Rückenmarkstumor). *Deutsche med. Wchnschr.*, 1913, xxxix, 70. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A woman, 23 years old, previously healthy, was suddenly taken sick, following a cold, with fever, pain

in the back and paræsthesias in the right leg. Two months later she presented severe, purely unilateral disturbance of a central nature, with nystagmus, pallor of the temporal halves of the papillæ and absence of the abdominal skin reflexes. Multiple sclerosis was thought of. In a few weeks the picture changed to that of a complete transverse lesion, so that the presence of a constricting process in the spinal canal was held very probable. Lumbar puncture showed a pressure of 110; the fluid was slightly yellow in color, contained much albumin and few leucocytes. In the operation performed by Garré the incision was made over the second and third dorsal vertebrae, as the upper border of the sensory disturbance at the fourth rib showed that the third to the fifth dorsal segments were involved, and under the second vertebra was found a flat, reddish formation under the dura. After scraping the dura and opening the sac a succulent deep blue mass protruded from the posterior aspect of the spinal canal. The soft tumor reaching to the first vertebra was spooned out and its center was found to have eroded the cord. Histologic examination (Rilbert) revealed a large celled sarcoma springing from the membranes. Healing by first intention occurred. Temporary improvement was followed by painful muscular spasms, high grade reflex excitability, vertigo, cystitis, decubitus and death one month after the operation. Autopsy was not allowed, so that the possibility of the coincidence of a tumor and multiple sclerosis could not be verified. STREISSLER.

**Park: Fracture of Atlas; Spontaneous Extrusion of Fragment Through the Mouth; Recovery.** *Buffalo M. J.*, 1913, lxviii, 312. By Surg., Gynec. & Obst.

The late James P. White of Buffalo, one of the best known American obstetricians of the last century, during the middle years of his life was thrown from a stage coach so violently as to seriously injure the upper part of the neck. No account is extant of the features of his case at that time, but Park reproduces a certificate, published in the *Philadelphia Medical News* under date of November 27, 1886, signed by Joseph Pancoast and duly attested, in which he states that he examined a fragment of bone known to have been spontaneously extruded from the pharynx of Dr. White, and describes it as the frontal segment of the atlas with the facette which received the odontoid process, the fragment measuring about an inch in its greatest diameter. White was well known to have removed this specimen from his mouth, and submitted it to Professor Patterson to show to Professors Pancoast and McClellan. It is Pancoast's opinion that the transverse ligament had so retained its hold on the extremities of the remaining portion of the atlas as to protect the spinal cord from injury. By personal acquaintance and in other ways Pancoast has satisfied himself of the authenticity of the report. White lived for many years after the injury, which he received in 1837, while his death occurred in 1881. He seemed



in no way to have had his usefulness or health impaired. Assuming the correctness of the statements, for which Park vouches, the case is one of the most unique on record.

**Haskovec: Symptoms and Diagnosis of Lesions of Cauda Equina and Conus Medullaris** (Zur Symptomatologie und Diagnose der Störungen der Cauda equina und des Conus medullaris). *Wien. med. Wchnschr.*, 1913, lxiii, 29.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports an interesting case with a lesion of the cauda equina. There was a complete anæsthesia of penis and scrotum, a diminished sensibility of the posterior surface of the legs and feet, and a derangement of function of the vesico-rectal region. It is evident that a lesion of this sort is due to an involvement of the sacral plexus on both sides, but especially of the third and fourth sacral roots. The symptoms in the regions specified point to the fact that the lesion is confined to the cauda equina. He considers this condition to be a chronic luetic process, and bases his diagnosis upon the history, which is not always reliable; upon the fact that the pains appeared chiefly at night; and upon the absence of any evident lesion under the X-ray, even though the patient had been sick for 22 years. Cases showing the final result under specific treatment which would confirm the diagnosis are lacking, and operative measures were not resorted to in this case.

GULEKE.

**Goldthwait: An Anatomic Explanation of Many of the Cases of Weak or Painful Backs, as Well as of Many of the Leg Paralysis.** *Boston M. & S. J.*, 1913, clxviii, 128.

By Surg., Gynec. & Obst.

Goldthwait calls attention to articles regarding the sacro-iliac joints, lumbo-sacral joints, hypertrophic arthritis of the spine, and the rheumatoid diseases. He believes that some of the peculiarities which have been described in these articles are much more common than originally supposed, and that the combination of some of these conditions explains symptoms which formerly had not been understood. An excellent collection of 18 illustrations is displayed.

He urges that the knowledge of the anatomic formation of the parts should be thoroughly understood, and explains that the flat surfaces of the articulations of the pelvic joint, with their vertical oblique axes, show that there can be but little support from the bones themselves, and that their stability must depend upon the soft structures, the muscles and the ligaments.

Patients can usually be relieved by supports, such as belts, straps, braces and exercises, in case the bones are not misplaced. When the bones are misplaced, relief is found, after the bones have been replaced, by similar supports.

In another class of cases, study of the proper relationship of the parts as affected by good and

bad poise is taken up. The suggestion is made that a better understanding of the pelvic joints, together with the appreciation that their stability is almost wholly dependent upon the tone of the muscles, has made it possible many times to correct postures of strain and to restore muscle balance so that normal instead of harmful function could result.

Considering the lumbo-sacral articulation, he believes that the transverse processes upon the last lumbar vertebra are broader than normal, and that occasionally they are articulated with the top of the sacrum. These processes may also articulate with or press against the top of the sacrum or the wing of the ilium, with resulting weakness of the sacro-iliac joint. A process may simply be somewhat larger in all its dimensions and be of little importance except as the body is bent to the side, impinging against the top of the sacrum, serving as a fulcrum for straining the lumbo-sacral joint. It may be still larger, but evenly and bilaterally enlarged, so that not only does the process impinge against the top of the sacrum in side bending, but in drooping the body the increased lordosis results in the crowding of the processes against the top of the sacrum. In such postures, since the transverse and articular processes are behind the body of the vertebrae, the weight of the individual must be taken off the body of the vertebrae and thrown upon the transverse processes and the tip of the articular processes.

He shows that the lumbo-sacral transverse articulation may exist upon both sides or upon only one; but if it exists upon both sides the two sides are rarely the same, one side usually being larger than the other.

Regarding the articular processes, he finds if the body is drooped so that there is an increase of the lumbar curve, the weight is received in part upon the tip of the articular processes, with the effect that if long continued a new articular facet at the top of the articular process of the lower bone is formed, while at the base of this process, in the curve where the articular process joins the lamina, a new articular surface forms as the result of the articular process of the vertebrae above being crowded downward onto this point.

Among the symptoms, he calls attention to pain, numbness, or paralysis in the leg. The referred symptoms may not be obvious. Complete paraplegia, involving not only the legs but the bladder and bowel, may occur as the result of strain or displacement of the last vertebra upon the sacrum or as the result of the dislocation backward of the intervertebral disc.

Less extreme conditions of paralysis or disturbance of sensation in the leg find their explanation in the anatomic formation. With the increased width of the transverse processes or with the crowding of the articular processes together, the space in which the nerve root leaves the spine or the space in which the lumbo-sacral cord lies as it passes under



the transverse process and over the sacrum to join the sacral plexus must be narrowed. This at times is enough to simply irritate the nerve, causing pain referred to the leg, at the distribution of the nerve, while at other times the constriction is enough to cause paralysis.

Regarding treatment, he states that if the sacro-iliac joint is involved as part of the lumbo-sacral malformation, it is obvious that treatment directed to the sacro-iliac joint will not bring relief. In such a case not only must the sacro-iliac joint be supported, but at the same time the body must be so poised that there is the least possible irritation at the lumbo-sacral joint, as well as the least possible pressure of the transverse process against the sacrum and ilium. To relieve this pressure of the transverse process the body should be held fully erect or the back should be flattened. Simple recumbency upon the back, however, sometimes increases the pain.

H. B. THOMAS.

#### MALFORMATIONS AND DEFORMITIES

**Sever: Orthopedic Principles for Use in General Practice.** *Boston M. & S. J.*, 1913, clxviii, 1.

By Surg., Gynec. & Obst.

The author takes up those orthopedic conditions which the general practitioner sees most frequently, such as clubfoot, wry neck, acute synovitis, infantile paralysis, weak feet, etc., and discusses the simpler methods of treatment which are available and useful. He lays emphasis upon the fact that many conditions need not go on to severe deformity needing operation and braces if properly and persistently treated early, when they are under the observation of the family physician.

This is especially true of clubfoot, infantile

paralysis and acute joint affections which later become chronic and result in distortions of the limb. Many of the procedures are carefully described in detail. It is an article that should be read with interest by the general practitioner.

JOHN L. PORTER.

**Forbes: Clawfoot and How to Relieve It.** *Surg., Gynec. & Obst.*, 1913, xvi, 81.

By Surg., Gynec. & Obst.

Forbes describes clawfoot as characterized by foreshortening of the foot with contraction of the plantar fascia causing cavus, by tonic contraction or permanent shortening of the extensor muscles and tendons, causing hyperextension of the toes and a depression of the metatarsal heads.

It is never, in his experience, congenital, but has an insidious onset. His procedure for correcting this condition is as follows: Transplant the common extensor tendons into the heads of the metatarsal bones, after having detached them from their insertion into the phalanges. He believes that the common extensors, while maintaining the phalanges in position of hyperextension, are acting as a power for positive evil. Transplanting these gives support to the depressed heads of the metatarsal bones. He raises the heads of the metatarsal bones by pressure from beneath, drills small holes laterally through the bone and inserts a silk ligature through this hole and the tendons, holding the tendons close to the heads of the bone. If this cannot be done, he passes the silk clear around the heads of the bones and ties it firmly. The author makes a horseshoe incision on the dorsal surface of the foot to get at these tendons, and follows this operation with a fasciation of the plantar fascia, stretching the foot over an orthopedic block and afterwards putting it up in plaster.

P. B. MAGNUSON.

### SURGERY OF THE NERVOUS SYSTEM

**Weiss: Symptoms Simulating Klumpke's Paralysis Following an Accident** (Eine den Symptomen der Klumpkeschen Lähmung ähnliche Unfallfolge). *Aerztl. Sachverst. Zeit.*, 1913, xix, 31.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A miner who had been injured two years ago showed symptoms simulating those of Klumpke's paralysis. The symptoms appeared on the side that was least injured by the accident. There was a disturbance of the sympathetic, causing a ptosis of the upper lid, miosis, and the skin about the ear was red and somewhat glossy. The secretion of sweat stopped on the affected side and the face became asymmetrical. There was also a slight lesion of the sensory nerves supplying the arm and of the branches originating from the eighth cervical and first thoracic nerves. The presence of the sympathetic lesions, according to the author, are due to the close proximity of the inferior cervical ganglion.

GRASHEY.

**Beer: The Relief of Intractable and Persistent Pain Due to Metastases Pressing on Nerve Plexuses by Section of the Opposite Anterolateral Column of the Spinal Cord Above the Entrance of the Involved Nerves.** *J. Am. M. Ass.*, 1913, lx, 267.

By Surg., Gynec. & Obst.

In the case here reported the patient was suffering from uncontrollable pains due to a metastatic carcinoma pressing on the nerve plexuses in the pelvis, following a carcinoma of the uterus that had been operated some two years earlier. The operation consisted of a laminectomy of the ninth and tenth dorsal vertebrae, and then a section of the opposite (to the pain) anterolateral ascending sensory tract. This section was made just in front of the crossed pyramidal tract, *i.e.* approximately 2.5 mm. anterior to the exit of the posterior nerve root, and approximately to the same depth and the same distance forward. Relief followed the operation at once. As a result of the section, there was pain



anæsthesia from the first lumbar distribution down through all the sacral roots, and pain never recurred in this distribution, though some time later the patient developed pain in a higher segment, as the metastasis grew to the level of the umbilicus. After the operation there was a transient motor paralysis, which disappeared within a few days, as the patient was able to walk after ten days with only slight weakness of the leg on the side of the operation.

The author concludes:

1. Surgically considered, the operation of cutting the anterolateral column without doing serious damage to the rest of the spinal cord is perfectly feasible and not difficult.

2. Therapeutically considered, the almost complete freedom from pain produced by this surgical intervention met the indications presented in the case here reported, and in many other sufferers a similar intervention, I feel sure, will give similar relief.

3. Physiologically considered, section (complete?) of the anterolateral column produces (a) loss of pain sense on the opposite side of the body; (b) a disturbance in thermal sense, which suggests that the fibers for heat and cold are dissociated in the cord; (c) slight disturbance of deep pressure sense and slight-

est disturbance in touch sense, both being impaired without producing any disturbance of sense of position.

**Frazier: The Relief of Gastric Crises in Tabes Dorsalis by Rhizotomy.** *Am. J. M. Sc.*, 1913, cxlv, 116. By Surg., Gynec. & Obst.

The first rhizotomy for the relief of gastric crises was performed by Förster in 1908. He cut the sixth to tenth dorsal roots within the dura. Patient was completely relieved until the time of his death nine months later.

Frazier's case was a man forty years of age who had had severe crises for three years. The laminae of the fifth, sixth and seventh thoracic vertebrae were removed and the seventh, eighth, ninth and (left side) tenth were cut. There had been no recurrence of the pain and vomiting at the time of writing, seven months later.

Frazier urges that the operation be completed at one sitting and that the nerve roots be severed within the dura. He was able to gather records of 30 cases of rhizotomy for gastric crises. Of these, there were 9 complete recoveries, 16 were improved, and 5 deaths.

JAMES F. CHURCHILL.

## DISEASES AND SURGERY OF THE SKIN AND APPENDAGES

**Bruck and Glück: The Effect of Intravenous Infusions with Aurum-Kalium Cyanatum (Merck) in External Tuberculosis and Syphilis** *München. med. Wchnschr.*, 1913, lx, 57.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Starting from an observation of Koch, the authors have in a number of cases of extensive lupus injected solutions of aurum-kalium cyanatum in amounts of 0.02 to 0.05 gr., a dose every second or third day. More than 0.05 gr. should not be given. As a rule, twelve such injections were made, with the result that everywhere a considerable improvement of the foci could be observed. Where gold was injected in combination with tuberculin at the height of the reaction, the effect was still more favorable. Also in syphilis, especially in the tertiary cases, very favorable results were obtained, which could even be favorably compared with the action of salvarsan.

LINSER.

**Saalfeld: Radium and Mesothorium Treatment of Skin Disease** (Ueber Radium und Mesothorium Behandlung bei Hautkrankheiten). *Berl. klin. Wchnschr.*, 1913, l, 166.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

On the basis of his experiences (presentation of several cases); Saalfeld recommends radium and mesothorium in the treatment of slowly growing, slightly adherent cancroids. In inoperable cutaneous carcinomata the treatment is worthy of a trial.

Radium and mesothorium are contraindicated in rapidly growing and very malignant cutaneous carcinomata. A further indication for the application of radium and mesothorium is found in keloid, lichen ruber planus and verrucosus and in isolated obstinate plaques of psoriasis. Angioma are to be treated by this method only when other methods (CO<sub>2</sub> snow) fail. The author warns against the indiscriminate use of these remedies for cosmetic purposes, because the idiosyncrasy toward radium and mesothorium, just as toward the X-rays, can produce injuries worse than the primary affection. To intensify the action Saalfeld allows CO<sub>2</sub> snow to act in the spot for 5 to 10 seconds before the treatment and recommends this method as an after trial.

THEIMANN.

**Neudorfer: The Application of Free Fascia Transplantation** (Zur Verwendbarkeit der freien Fascientransplantation). *Zentralbl. f. Chir.*, 1913, xl, 44.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author made use of autoplasmic fascia transplantation in cases of spina bifida occulta and meningocele occipitalis inferior. One of the two children was 4 months old. Both left the institution cured. The simplicity of the technique and the excellent result attained make the author believe that these cases can very well be treated in this way.

REHN.



## MISCELLANEOUS

CLINICAL ENTITIES—TUMORS, ULCERS,  
ABSCESES, ETC.

**Bashford: The Carcinoma Problem** (Das Krebsproblem). *Deutsche med. Wchnschr.*, xxxix, 1913, 4.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The former teaching that sarcoma is a disease of youth is untenable. Although sarcoma is relatively more frequent during youth while carcinoma is more frequent during old age, both increase with age. The relationship of mortality to age varies for different organs, but is similar for the same organ in both sexes; for example, the age curve for carcinoma of the breast in both sexes is about the same; the total deaths from carcinoma of the uterus are much higher than for carcinoma of the breast. It follows from the statistics that the influence of senescence is more important for the production than for the growth of carcinoma. To speak of a general increase of carcinoma is wrong, since certain parts of the body — for instance, skin, liver, genital organs, and others — show no increase or only a slight one. In carcinoma of the breast, and especially that of the intestinal tract, an increase is certain. The frequency of cases of carcinoma in different countries depends upon the development of mortality statistics. The supposition that carcinoma is relatively infrequent in some countries is overthrown by the facts of the English statistics. The simultaneous occurrence of certain forms of carcinoma of exotic tribes with chronic irritation is important; for example, the frequency of carcinoma of the mouth in the women of India who chew betel nut. There are similar examples from the animal domain. In India there occurs in cattle a pavement epithelium carcinoma at the root of the right horn — never on the left. They are harnessed by the right horn.

Statistics and animal experiments speak against an infectious etiology and theory of contagion. Animal experiments show also that tumors do not generally grow upon a soil suitable for the growth of carcinoma — for example, aging organism — but that the origin of the spontaneous carcinoma and its growth is an individual question for each case. The value of a chronic irritation for the origin of a tumor can be traced to a certain degree in experimental animals in which, possibly through parasites (nematodes in carcinoma of the breast observed in rats), a chronic irritation is produced, although it may play only an indirect rôle. Transplantation tumors in mammalia grow only then when they are taken from animals of the same species. An artificial immunization against tumors of the same sort by vaccination with tumors or normal tissue of another individual of the same species is possible. All attempts at immunization against spontaneous tumors have been futile. They progress and show metastases.

In the constancy of most tumor varieties it is

especially the variability of the tumor cells in artificial transplantation which gives us the interesting insight into the relationship between chronic irritation and tumor growth. It was shown experimentally through double vaccination that the different mode of growth of the transplanted tumors, whether progressive or not, depended upon the changing ability of the tumor cells to overcome obstacles to its growth in the host and on the other hand on the sensibility of the tumor cells to this obstacle. The histologic examinations of the site of vaccination in normal and immunized animals shows, as an explanation of immunity, the inability of the tumor cells to produce the characteristic effect on the connective tissue and vessel cells of the immunized animal. It follows that the tumor cells have inherent characteristics which are important ones, and that the tumor cells themselves must be attacked.

STAMMLER.

**Theilhaber: The Prophylaxis of Carcinoma** (Die Prophylaxe der Carcinome). *Wien. klin. Wchnschr.*, 1913, xxvi, 10.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author considers marked atrophy of the subepithelial connective tissue with diminution and stenosis of the blood-vessels as prerequisites for the development of carcinoma. Trauma, inflammations, and scars cause this pathological condition of the connective tissue. The best way to avoid tumor growth in such cases is by massage, cupping, hot air, and diathermy. This is especially applicable in recently operated carcinoma as a preventative for a reappearance of carcinoma in the scar. Many growths occurring after operation are new cancers which arise from the scar because of the fruitful condition of the site for such growth. Any epithelium which might chance to land in healthy connective tissue would be absorbed at once, while in atrophic tissue with stenosed vessels the epithelial cells would have an opportunity to proliferate and develop into a carcinoma. Hyperæmia produced by any of the above mentioned methods is not harmful, but on the contrary makes small cancer herds harmless. A lengthy work on the subject is to appear soon.

FRANKL.

**Gould: The Treatment of Inoperable Cancer.** *Lancet*, Lond., 1913, clxxxiv, 215.

By Surg., Gynec. & Obst.

In the general treatment of cases of inoperable cancer the author urges the importance of mental and physical rest and thinks that the hospital treatment is of great value to them. He says the patient should be informed of the exact condition and thinks the knowledge of the real state of affairs has very rarely seemed to do harm, and in the late stage of the disease, when curative measures are not to be thought of and palliation is our function, it has



seemed to do great good. He attaches great importance to physical rest. In cancer of the mouth, a mouth wash of sanitas and water in the proportion of 1 to 2 dr. in 5 oz. gives good results. All loose teeth should be extracted and the removal of sloughs and sequestra is often followed by considerable relief. In uterine cancer the frequent careful use of non-irritating antiseptic douches is recommended. For cancer of the rectum where colotomy has been done, the washing through of the bowel from artificial to natural anus should be regularly carried out whenever it is possible. External cancer may be kept in a cleanly condition by the use of antiseptic lotions, ointments, and dressings; in other cases the use of X-rays will be found very beneficial in "cleaning-up" extensive and foul cancerous ulcers. Diet should be simple, easily digestible, and varied. Alcoholic stimulants of all kinds are as a rule to be avoided, for anything approaching a free use of alcohol adds greatly to the activity of the disease. Opium and its derivatives should be used as sparingly as possible. Aspirin is given to many of the patients, phenacetin to others. It is most important for the comfort of these patients that the bowels should act regularly every day, or at most every other day.

To sum up, then, the general treatment of late cancer should consist in the avoidance of all fatigue, strain, and worry; the observance of strict cleanliness; care and moderation of diet; the proper regulation of the bowels; abstinence from stimulants; and the minimal use of opium and its derivatives consistent with the reasonable comfort of the patient.

*Palliative operative measures.* In the author's experience, gastrostomy is a most valuable procedure in cases of malignant stenosis of the gullet. The patient may recover some of his lost power of swallowing; life is prolonged for months, sometimes for years; and the patients are spared the pains of death from starvation. He employs a rubber catheter, No. 18 English scale. He is in favor of colostomy for irremovable cancer of the colon or rectum when there is marked obstruction, severe pain connected with the passage of motion over the ulcerated surface, or free hæmorrhage from the growth. It should be employed only when there is definite indication for it.

Cystostomy for cancer of the bladder or prostate is sometimes of value. It is especially indicated where the growth bleeds and clots are passed with great difficulty and pain, and where micturition is very frequent and agonizing. Gastro-enterostomy in cases of irremovable pyloric cancer is generally attended with great benefit and notable prolongation of life. It is a good operation, well worth doing. Paracentesis, either of the pleura or peritoneum, is a simple operative procedure often attended with great benefit. He postpones tapping until the pressure of the fluid is causing marked dyspnoea or abdominal distress. The remarkable relief of pain, of vomiting, and of optic neurosis in cases of cerebral

tumor, afforded by decompressing operations is well known. In Gould's experience the operation of lymphangioplasty has been a disappointing procedure, and he doubts if it is worth doing.

Under non-operative measures he says that he has not had any success with Coley's fluid, nor has he seen any case where it has effected a cure in what was known to be a case of malignant disease. Gamma radiations produced by the X-ray tube or by radium can undoubtedly inhibit cell growth, and they seem to have a special power over cancer and sarcoma cells, and more than this, they have the power of destroying malignant cells. He speaks very favorably of these radiations and reports several treated by this method, particularly by radium. By the use of X-rays in cancer of the breast he has seen foul ulcers cleaned; some ulcers have healed up entirely; he has repeatedly seen small secondary nodules in the skin and fascia disappear; he has had several cases where larger and deeper secondary growths involving muscle, ribs, rib cartilages, or sternum have disappeared, and in other cases such growths have remained stationary and quiescent for such long periods that he could only think the radiations had had at least an inhibitory influence on the growth.

D. C. BALFOUR.

**Kafemann: The Non-Operative Treatment of Cancer According to the Principles Observed in the Heidelberg "Samariterhaus"** (Die nichtoperative Behandlung des Krebses nach den Grundsätzen des Heidelberger Samariterhauses). *Med. Klin.*, 1913, ix, 161.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

On the basis of his studies and his personal experience in the Heidelberg "Samariterhaus," the author reviews the present state of the non-operative methods of treating cancer. Of those employing chemical cauterization, he gives special attention to Zeller's method. He recognizes the surprising effect of arsenic cinnabar paste on superficial tumors, carcinomata, sarcomata, and lupocarcinomata, but does not share Zeller's optimistic opinion that even deep-seated tumors may be cured by this method. In this connection he points out how life may be endangered by the hæmorrhages which would result from the erosions of the vessels by an agent which, like the one mentioned, indiscriminately destroys the tissues. The methods which employ silicic acid, so far, have not produced any appreciable results; nor have the toxin treatments done so. Among the latter the old streptococci toxin of Coley has proven the most effective, but it has had to be given up on account of its dangerous by-effects. Antimeristems, Doyen's as well as Schmidt's, the author declares have no effect whatever. While still undeveloped, chemotherapy, for which Wassermann's selenosin treatment laid the foundation, is steadily progressing and promises well for the future. A detailed description is given of the cholin-seleno-vanadium treatment. Curative effects have even been claimed for salvarsan, especially in sar-



comata. The author expects good results from a combination of maximum potency radiotherapy with salvarsan, cholin-seleno-vanadium, and thorium-X. For that reason he urges postponement of operative removal of important organs, except in urgent cases, until this method has been given a trial. Among the physical methods of therapy, the treatment with X-rays has not fulfilled optimistic expectations, whether used alone or in combination with injections of adrenalin or fluorescent substances. The same must be said of its combination with stimulation by short-circuit sparks or with high frequency currents. These methods, like radiotherapy and the frequently even more effective mesothorium therapy, do produce results in many cases of superficial and protruberant tumors, but they fail almost completely with deep-seated tumors. Good results are claimed for the intravenous and intratumoral treatment with thorium-X; its action, however, is not indifferent. The author concludes that, now as ever, the rank of prime importance must be assigned to timely operation; where it fails, or in combination with it, he demands non-operative treatment according to the method which is applicable to the individual case.

HOCHHEIMER.

**Simpson: Growth Centers of the Benign Blastomata, with Especial Reference to Thyroid and Prostatic Adenomata.** *J. M. Research*, 1913, xxvii, 269.

By Surg., Gynec. & Obst.

The material for the author's studies consisted of 75 thyroids obtained at autopsy, without regard to age or pathological condition. In this series, adenomata were found in 80 per cent of the cases. Simpson states that it is his belief that if one were to make serial sections of all thyroids found in this region after the age of puberty (Freiburg-in-Breisgau), they would find these adenomata in nearly every case.

He concludes the struma nodosa is a true tumor formation; that the various forms described are different expressions of degenerated processes of these tumors. He believes that these degenerations begin at the oldest part of the tumor and therefore represent its origin or growth center as he has designated it; that these adenomata apparently occur as two primary forms, namely, parenchymatous and cystic; that the great majority are unicentric growths, although occasionally one finds two growth centers in the one capsule.

In regard to the prostatic adenomata, the author finds in reviewing the literature a great diversity of opinion regarding the genesis and pathological anatomy of the condition commonly called prostatic hypertrophy. It would appear that the more recent investigators are in accord with the view that the condition is a new growth. The author's material for this study consisted of 45 prostates obtained at autopsy, ranging from 7 months to 79 years of age.

The fibro-adenomata of the breast and myomata of the uterus were likewise studied. In these breast

tumors, as in the prostatic adenomata, the tendency of the interstitial connective tissue to undergo degenerative changes was not marked, but the author found atrophic epithelial cells surrounded with fibrous tissue which, in comparison with the connective tissue in other parts of the same nodule, is extremely poor in nuclei. These areas the author considers the growth centers, and in rare cases one may find evidences of degeneration.

In the more rapidly growing myomata one finds, at these centers, evidences of more rapid change, viz., oedema, fatty metamorphosis, circumscribed necrosis, with a subsequent tendency to calcification. All are evidences, Simpson believes, of the relative rate of growth of tumor cells, and correspond to the original starting point of the tumor, or the "growth center" as it has been designated.

GEORGE E. BEILBY.

**Oser and Egon: The Significance of the Spleen During the Growth of Malignant Tumors, and the Influence of Splenic Pulp on Tumors** (Ueber die Bedeutung der Milz in dem an Malignant Tumor Erkrankten Organismus und die Beeinflussung von Tumoren durch Miltzbrei). *Ztsch. f. exp. Pathol. u. Therap.*, 1913, xii, 295.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Oestreich explains the involvement of cartilage and vessel walls in tumor growth by the presence of chondroitin-sulphuric acid. He had hoped to make use of this fact in combating the growth of tumors. Reidel made antituman under his direction, the main constituent of the preparation being sodium chondroitin sulphate. Oestreich claims to have had good results with it, especially after tumor operations.

The authors tried it in hopeless cases and after operations. It was injected intramuscularly for 4 to 8 weeks in 9 cases of carcinoma of the breast recurring after operation, 2 scirrhus tumors of the mammae, and 2 carcinomata of the mouth and one of the tonsil. The results were very unsatisfactory; in no case was there a cessation of the growth or a regression of the metastatic tumors. The patients complained of pain in the tumor for an hour or so after each injection.

Since the spleen is only rarely affected by malignancy, Braunstein experimented with a paste from it which he injected into animals afflicted with cancer. He came to the conclusion that the spleen had a high degree of immunity. Animals from which the spleen was removed 3 to 4 weeks before the experiments were begun showed a more rapid development of tumor tissue than the control animals. The authors, working on rats, found that sarcoma grew with exceptional rapidity under similar conditions. Normal rats injected with tumor cells were used as controls.

In another series of experiments the influence of injected splenic pulp on sarcoma was studied. The spleen was removed from rats that had received inoculation with sarcoma cells 14 days previously, and in which the tumors were the size of walnuts.



The spleen was triturated with normal salt solution and injected hypodermically into other tumor rats. Various tests were performed, and the results showed that the tumors of splenectomized animals grew more rapidly. The injection of the splenic pulp into sarcomatous rats caused a regression or arrest of the growth. The tumors did not get a start in rats which received the injection of spleen pulp at the time the sarcoma was inoculated. There seems to be an antibody developed which is not present in normal blood.

KONJETZNY.

**Babcock: Superficial Metastatic Growths in the Diagnosis of Deep-Seated Malignant Tumors.** *N. Y. M. J.*, 1913, xcvi, 109.

By Surg., Gynec. & Obst.

When a malignant tumor is discovered in the body it is customary to look for metastatic growths along the efferent, lymphatic and vascular paths. At times the malignancy of the primary growth is then proved by an exploratory operation. The author suggests a reversal of this customary procedure, urging that in suspected deep-seated malignancy search should first be made for superficial metastatic nodules, and if any new growth of the skin or subcutaneous tissue be found, it be excised under local anæsthesia and microscopically examined before an exploratory operation upon the primary tumor is considered. The reasons advanced for this method are: (1) The accessibility of the metastatic growths; (2) the lessened danger of hæmorrhage, infection, tumor dissemination, or leakage from a hollow viscus; (3) the essence of malignancy is focalized in the metastasis.

The proof of metastasis and a fresher and more accurate picture may be found in the secondary nodule than in a degenerated primary growth. Illustrative cases are given in which the nature of a brain tumor was shown in a localized papular eruption of the overlying scalp; obscure carcinomata of the stomach and thorax were proved by examination of supraclavicular nodules; a mesenteric nodule removed during an appendectomy showed the presence of a symptomless carcinoma of the stomach; a rapidly growing nodule over the lower thorax was the only definite outward indication of a small carcinoma of the sigmoid; and a dispute as to the nature of a lingual growth was settled by the examination of a cervical nodule. In malignant tumors of the liver, secondary growths may be found around the umbilicus, and all surgeons are familiar with the bluish or reddish macular or papular eruptions upon the skin overlying tumors of the breast which usually indicate an inoperable type of malignancy.

In many cases no other test or simple diagnostic method reveals as much as the positive evidence obtained by the microscopic examination of the superficial metastatic nodule. On the other hand, purely negative evidence, of course, does not disprove the presence of deep-seated malignancy.

**Küttner: Circumscribed Tumor Formations Caused by Abdominal Fat Necrosis and Subcutaneous Splitting of Fats** (Ueber circumscribte Tumorbildung durch abdominale Fettnekrose und subcutane Fettsplaltung). *Berl. klin. Wchnschr.*, 1913, l, 9. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Küttner reports three observations which are important from the standpoint of the pathology of the fatty tissues. Circumscribed abscesses in abdominal fat necrosis are not uncommon, but circumscribed tumors such as the author describes in two cases had not been reported before.

In a corpulent woman, 56 years old, who was taken sick with severe and repeated abdominal symptoms, there developed a large, hard, round tumor the size of a child's head on the right side of the abdomen, which because of the history was regarded as an infiltration due to appendicitis. At the laparotomy this proved to be a conglomeration of adherent loops of intestine, which with the adherent omentum surrounded a cavity filled with necrotic fatty tissue and opaque fat droplets. The appendix was entirely intact. The cavity was emptied and tamponed and healing resulted. The microscopic examination showed the content of the cavity to consist of necrotic fat tissue, cells containing fat droplets, and a few round cells. Neither eggs nor tumor cells could be found. Bacteriologic examinations were negative.

Case 2 was that of a 45-year-old stout man who complained of chills and high fever with pain in the region of the liver and stomach that radiated to the right shoulder and right arm. He was constipated and passed no gas. The next day a tumor developed in the gall-bladder region which was sensitive to pressure. This was soon followed by icterus. Two and a half months after the disease began, an elongated, hard tumor was found in the region of the gall-bladder, which was regarded as a tumor of the gall-bladder. At operation it proved to be a tumor of the omentum, which on cross section had a peculiar appearance and seemed to be composed of necrotic fatty tissue. Microscopic examination corroborated this diagnosis. Gallstones were not found. In the region of the pancreas and in the abdominal cavity nothing pathologic could be seen. In Case 3, which was of an entirely different etiological origin, we have to do with a tumor formation in the breast produced by a change in the fat tissues. A 63-year-old woman received a blow in the breast. A few weeks later she discovered at the site a nodule which on examination appeared in the lower quadrant as a hard fixed tumor the size of a nut. At the operation it was shown to be a tumor of the subcutaneous fatty tissue and was not connected with the glands. The fat had the peculiar opaque appearance and consistency which was characteristic of abdominal fat necrosis. Microscopic examination showed a characteristic giant cell granuloma. The giant cells were arranged radially about collections of fatty acid crystals. There had been a splitting off of fatty acids from the fat and a chronic



inflammation in the tissues. Whether the fat splitting was primary and caused an inflammatory reaction of the tissues, or whether a primary chronic inflammation of the connective tissue led to a secondary splitting of the neutral fat, could not be determined, although the picture of the foreign body giant cells pointed more to a primary fat splitting with secondary inflammation. A relationship between this process and the trauma appears likely.

KONJETZNY.

**Sample and Gorham: Malum Perforans in Diabetes Mellitus; a Report of Seven Cases.**

*Bull. Johns Hopkins Hosp.*, 1913, xxiv, 28.

By Surg., Gynec. & Obst.

At the request of Prof. Barker the authors have made a study of the clinical aspects of malum perforans as a complication of diabetes mellitus, based upon the findings in seven cases admitted to the Johns Hopkins Hospital. Two of the cases were studied by the authors personally, and the details of the others were taken from the hospital records. Their study of these cases still left the etiology of the condition in doubt. While several authors believe that the ulcer depends upon changes in the peripheral nerves, Sample and Gorham are inclined to argue against this view, from the fact that in these cases the sensory disturbances were slight, and further, the ulcers did not present the same picture as that seen in known forms of chronic neuritis. The mechanical factor, they believe, has some etiologic importance, as that due to constant pressure exerted on certain parts of the feet in walking or standing. In favor of this theory is the marked improvement which in some cases follows upon rest in bed and removal of the pressure. It is probable, however, that the mechanical factor is nothing more than a contributory cause. The third theory offers vascular change as the primary cause of perforating ulcer, but in the majority of cases here reported no arteriosclerosis, or only a slight grade, exists in the vessels leading to the part affected. Endarteritis obliterans must, however, be borne in mind. The view that the true cause lies in a disturbance of tissue vitality due to the existing hyperglycemia seems a rational one. As a result of this lessened tissue resistance one might well explain the frequent appearance of furuncles, carbuncles, and gangrene. The initial lesion is often in the form of a small vesicle which later develops into an ulcer, or the process may take its origin from an infected corn. The condition may be superficial, limited to the skin and subcutaneous tissues, or it may extend more deeply, involving bone or cartilage, or opening into a joint. The metatarsal phalangeal joint is a favorite seat for such a pathological change. GEORGE E. BEILBY.

**Proescher: Etiology of Rabies.** *N. Y. M. J.*, 1913, xcvi, 15.

By Surg., Gynec. & Obst.

Microscopically visible organisms appearing in two forms, coccus and bacillus, were found by the

antiformin method in the brain, the nerve ganglia and salivary glands of rabid animals.

Their etiological relation to rabies was demonstrated by the production of typical rabies in rabbits injected intracerebrally with the antiformin sediment of fresh brains from rabid animals.

Owing to the rather difficult technique employed in the antiformin process, many experiments with anilin dyes were tried to demonstrate micro-organisms by substantive staining. Methylenazur alone, in the form of the easily dissociable methylenazurcarbonate, will stain the rabies virus. It will stain the entire life cycle of the virus, including a spirochæte form which was not shown with the antiformin method.

The spirochæte form will satisfactorily explain the route of infection of the rabies virus, which travels along the nerve fibers. The spirochæte and bacilli forms develop from the cocciform.

The efficiency of the staining method was tested by staining the fixed virus from different Pasteur institutes, the same micro-organisms being found in all stains.

**Watson: The Negri Bodies in Rabies.** *J. Exp. Med.*, 1913, xvii, 29.

By Surg., Gynec. & Obst.

Watson concludes, as the result of a large amount of histological work, that the Negri bodies are the etiological agent in rabies and that they present two general types or phases in morphology, in growth and in reproduction. These two phases are constantly cyclic in their development and correspond to a multiplicative or schizogonous, and to a reproductive or sporogonous, life cycle. Watson is inclined to believe that the Negri bodies are definite protozoan parasites and, from a study of their life history, places them in the sub-order of cryptocysts, of the sporozoa.

JAMES F. CHURCHILL.

**Risley: Shock: A Review of the Theories and Experimental Data to Date.** *Boston M. & S. J.*, 1913, clxviii, 112.

By Surg., Gynec. & Obst.

As early as 1568 the phenomenon of shock was recognized, and was supposed to be due to a foreign body in the wound or blood. From that time down to the present there have been a great many theories, most of which have been proven false. As the problem stands to-day there are several contradictory theories which are all pretty well based on experimental evidence.

Crile maintains that vasomotor exhaustion is the primary cause. Boie thinks that cardiac exhaustion is the prime factor, whereas Howell believes that both cardiac and vascular changes are at fault. Kinneman considers a disturbance of thermogenetic functions as the chief element, and Henderson a reduction of the carbon dioxide content of the blood and tissues (acapnæa).

Shock is a "condition induced by fear, exposure, infections or trauma, in which there is exhaustion of nerve cells, principally those of the vasomotor centers, but also, probably to a much less extent, of



other centers in the medulla, such as respiratory and cardiac, and consequently lowered vascular tone and cardiac and respiratory depression of so even a degree as often to result in death."

Malcolm of London believes, from a clinical standpoint, that if vasomotor exhaustion is present there should be a relaxation of the peripheral arterioles and an overfilling. As a matter of fact, all clinical evidence speaks against such an overfilling, as the body is cold and clammy, the mucous membranes are anæmic and incisions during shock are almost bloodless. Crile, however, explains this condition by saying that the blood in all probability has already flowed *through* the dilated arterioles and has collected in the deep veins, where it is demonstrable after death.

Liebig and Lyon, working on vagi by electrical stimulation, prove that vasomotor exhaustion does not occur in shock, but rather vasoconstriction. Their work, however, is limited to one class of experiments, and does not prove alike for all kinds of surgical trauma and shock.

The theory of Henderson is that the underlying cause of shock is a decrease in the carbon dioxide content of the blood and tissues and an over-oxygenation, a condition called *acapnœa*. This robs the respiratory center of its normal stimulus, and spontaneous respiration ceases. If the *acapnœa* is intense, respirations may cease for so long a time that the heart finally stops beating because of lack of oxygen. With *acapnœa* there comes a fall in blood pressure and dilation of the splanchnic veins, as it has been shown that the tonicity of the blood-vessels is in direct proportion to the carbon dioxide content of the blood.

Crile's work on shock is probably more exhaustive than any other. He believes the essential factors to be considered in surgical shock are: trauma, the anæsthetic, a primary rise with a following fall in blood pressure, decrease in body temperature and vasomotor inhibition, paralysis, and then exhaustion. In addition to these factors, more recent experiments of Crile have shown that there are histologic changes in the nerve cells of an animal which has been subjected to shock. These cells stain faintly and indistinctly and show degenerative changes. Crile goes further and states that there is strong evidence to show that traumatic influences which damage the nerve cells of the cerebral cortex are not prevented from acting upon the nerve cells even though the patient be under a general anæsthetic. This evidence has led to the elaboration of Crile's anoci-association theory and the inclusion of nerve blocking in his operative technique.

JAMES H. SKILES.

**Marcuss: A Case of Muscular Dystrophy after an Accident** (Fall von Muskeldystrophie nach Unfall). *Monatsch. f. Unfallh. u. Inval. Wes.*, 1913, xx, 18.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A brakeman, 20 years old, suffered from a severe bruise of the left upper thoracic wall. He de-

veloped a traumatic pneumonia, from which he recovered. The muscles of the shoulder and breast soon started to atrophy. This gradually affected the whole left arm. After 3½ years, the musculature of the right shoulder also started to atrophy. It was evident that this case was more than an atrophy due to injury. It was diagnosed as juvenile muscular dystrophy. The relation of the injury to the disease is difficult to perceive. The patient was apparently strong and healthy before the accident. According to Marcuss, however, the patient may have had a beginning muscular dystrophy at the time of the accident, and the trauma may have activated it.

GRASHEY.

**Carrel: Artificial Activation of the Growth in Vitro of Connective Tissue.** *J. Exp. Med.*, 1913, xvii, 14.  
By Surg., Gynec. & Obst.

Carrel has studied the effects of tissue extracts on the rate of growth of connective tissue in vitro and finds that extracts of tissues and tissue juices, under certain conditions, accelerate the growth from about three to forty times. This activating power is found in many tissues. It is much more marked, however, in the extracts of embryos, of adult spleen, and of the Rous sarcoma. The power diminished directly with the dilution of the extracts, and appeared not to apply to the tissue of a heterologous animal. The power was reduced when heated to 56° C., and destroyed when heated to 70° C. It was diminished markedly by filtration through a Berkefeld filter and was completely removed by filtration through a Chamberlain filter.

JAMES F. CHURCHILL.

**Dilger: Tissue Cultures of Grown Animals in Vitro** (Ueber Gewebeskulturen in vitro unter besonderer Berücksichtigung der Gewebe erwachsener Tiere). *Deutsche Ztschr. f. Chir.*, 1913, cxv, 243.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Dilger in his work questions the results of Burrows and Carrel in their experiments with tissue cultures. He wonders whether there was any actual growth in the cultures of Burrows and Carrel. Does genuine budding and cell division occur, or is the change uniform in the whole tissue, or is there any real organic change? An active growth of cells is said to take place in such tissue cultures. A transformation of round cells into spindle cells had been observed in cultures of embryonal tissue. Nerve and mesenchymatous cells of chicken embryos show the greatest tendency to growth. On the contrary, no growth of tissue takes place in healing wounds of visceral organs. For example, the formation of parenchymatous tissue in the spleen in case of wounds of that organ never takes place. The regeneration of functional renal tissue in scars of the kidney never occurs.

It is essential, according to Dilger, to know the age and kind of animal the tissue is taken from. Careful tabulations of the age of the animal were lacking in preceding articles on the subject. Carrel and Burrows observed an increase of volume in their



cultures; karyokinetic figures were particularly noticeable. They described two kinds of formed cells which they took for connective tissue and epithelial cells, although they admit that the cells were not very typical. Dilger, on the other hand, could not confirm the presence of epithelial cells on the cultures of kidney and liver tissue taken from grown animals. At times he could detect some typical epithelial cells, but he says that it was tissue misplaced in the preparation. However, the author could always detect large numbers of interstitial and migratory cells along the border. These cells, the epithelial buds of other authors, are only illusions according to Dilger. Scattered epithelial cells can easily get down into the tissues when the preparations are made. These cells gradually work their way to the surface with the fluid. Cultures of epithelial cartilage taken from a pup six days old exhibited no increase in volume. Dilger says this was to be expected in such dense compact tissue. Cells fail to emigrate through firm cartilaginous tissue. Neither was anything characteristic seen in the resistant periosteum except in one small area where he microscopically demonstrated spindle and polygonal cells.

Most of the experiments were confined to spleen and bone marrow. Spleen and bone marrow cultures immediately exhibited cell emigration. Cell growth and emigration vary in direct proportion with texture of the tissue. The more perforated the tissue the greater the growth and emigration. Karyokinesis, according to Dilger, does not speak for genuine growth because karyokinesis can be demonstrated in normal tissue in all organs, even in adult life. The enumeration of the cells undergoing division, as Carrel had done it, is not of much value according to the author, because of error.

Degenerative changes soon occur in the cells. Fatty droplets and fine granulations appear. The whole picture points to a passive fermentative process which is probably mechanical. It is hard to understand how malignant tumors resulted from the cultures of Carrel and Burrows. Haddas could not produce malignant tumors with the cultures under the same conditions. The numerous researches in the formation of antibodies in cultures show that pieces of tissue may survive and remain physiologically active.

RUBESCH.

**Atkey: Tetanus Treated by Intravenous Injections of Paraldehyde and Copious Injections of Normal Saline, Resulting in a Cure.** *Lancet*, Lond., 1913, clxxxiv, 168. By Surg., Gynec. & Obst.

The patient, a boy aged 19, was admitted to the Khartoum Civil Hospital for some very septic tuberculous sinuses of the neck. Two days later he developed definite signs of tetanus. For seven days he was given intravenous injections of paraldehyde and ether in normal salt solution. The doses varied from 5 to 30 cc. each of paraldehyde and ether in 150 to 300 cc. of normal salt solution. The infusions were given as the severe symptoms

appeared. As soon as he showed improvement chloral and bromide were ordered. This mixture was continued three days. Sixteen days after the onset the symptoms disappeared and three weeks later he was discharged from the hospital in good condition. The author believes it advisable to begin with a fairly large dose.

C. H. DAVIS.

**Kästner: A Method to Demonstrate Isolated Actinomyces** (Ein Verfahren zur isolierten Darstellung des Aktinomyces). *Berl. tierärztl. Wchnschr.*, 1913, xxix, 77. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The method is based on the use of 33 per cent potassium. This destroys the albuminous cellular constituents of the tissue, but leaves the formed elements of hypomyces intact. Finely divided pieces of tissue are placed in a centrifuge glass and potassium is poured over them. After 24 hours (after having been stirred several times) the fungi are collected in the bottom of the glass. These are examined, unstained, in glycerin. Staining is easily done with aqueous eosin and vesuvium by pouring the staining solution over the sediment and leaving it for 24 hours. Sections are placed in xylol, alcohol, water and 33 per cent potash for 24 hours, then washed and examined in glycerin. In this way, not only the colonies of fungi but also the formed elements found isolated in the tissue may be seen as yellow, highly refractive globules.

WOLFSOHN.

#### SERA, VACCINES, AND FERMENTS

**Welch: Normal Human Blood Serum in the Treatment of Haemorrhagic Disease of Infants and Children.** *N. Y. M. J.*, 1913, xcvi, 125. By Surg., Gynec. & Obst.

This article begins with a discussion of anaphylaxis in its relation to the giving of serums. It then speaks of the efficacy of the injection of human blood serum in cases of haemorrhagic diseases of the newborn. To this are appended the histories of three cases. Welch believes that the condition is the result of a disturbance in the balance of the ferments of the endothelial cells lining the blood-vessels. As to the use of blood instead of blood serum, Welch urges that the extra work put upon the system by the formation of isolymsins should be taken into consideration. Also, in regard to direct transfusion, he thinks that while it is in some cases absolutely necessary there are certain dangers attached to it, and it is by no means an easy operation.

C. G. GRULEE.

**Zubrzycki: Contribution to the Treatment of Anæmia by Intramuscular Injections of Defibrinated Human Blood** (Beitrag zur Bekämpfung der Anämie durch intramuskuläre Injektionen von defibriniertem Menschenblut). *Wien. klin. Wchnschr.*, 1913, xxvi, 95.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 6 cases of severe metrorrhagia which were treated with injections of defibrinated



human blood with favorable results. The 6 cases dealt with women who had lost much blood and been treated conservatively and by curettement without effect. The favorable influence of the injections upon the blood is shown in the tabular registration of repeated blood examinations. The injections are easily applied, painless, and without danger. The author briefly explains the technique of this method, but admits inability to explain the manner in which results are obtained. Strong and healthy pregnant women were chosen as donors, and the treatment consisted in several intragluteal injections of 20 to 30 cm. of fresh defibrinated blood at intervals of three to four days.

EISENBACH.

**Sweek and Fleisher: Inhibition of Hæmolysis by the Serum of Cancerous Individuals.** *J. M. Research*, 1913, xxvii, 383.

By Surg., Gynec. &amp; Obst.

Kelling noted in 1906 that the serum of cancer patients possessed an increased hæmolytic activity when mixed with the corpuscles of lower animals. Even before this, other investigators had noted that serum of cancer patients possessed hæmolytic properties, but Kelling was the first to apply this test to the diagnosis of cancer. Crile, who has studied the subject exhaustively, has found that in the majority of cases of cancer the hæmolytic power of the serum for human corpuscles was greater than that of the serum of normal individuals.

The inhibitory power of the serum of cancer patients has also been investigated; it has been found that hæmolysis by mercury bichloride is not as strongly inhibited by the addition of cancerous serum as by the addition of normal serum. Lately Goldberger, who investigated the hæmolytic action of various acids, found that the serum of patients suffering with cancer possessed a markedly higher anti-hæmolytic power than the serum of normal individuals or of individuals suffering from diseases other than cancer. Sweek and Fleisher have therefore been making experiments to determine the results with both normal and cancer sera and lactic and oleic acids. Their results they give briefly as follows: In this series of experiments the authors find that the serum from 18 cancer cases and 12 normal individuals was tested for its anti-hæmolytic properties with lactic acid; 18 cancer cases and 12 normal individuals were tested with oleic acid. In no case was any marked increase of the inhibitory power of the serum of cancer patients evident. It therefore appears that the determination of the anti-hæmolytic activity of the serum of cancer patients cannot be used as a diagnostic method, and furthermore there is no evidence that an increased anti-hæmolytic activity exists in the sera of cancer patients; it also appears from their experiments that the anti-hæmolytic property of normal individuals living under uncontrolled conditions varies within rather wide limits.

GEORGE E. BEILBY.

**Ulrich: Vaccines and Vaccine Therapy.** *J.-Lancet*, 1913, xxxiii, 39.

By Surg., Gynec. &amp; Obst.

After reviewing the essentials of immunity on which vaccine therapy is based, attention is called to the inherent limitations and scope of this method. Emphasis is placed on preventative vaccination such as is already taking place in typhoid, bubonic plague, and cholera. One of three results obtains when bacteria invade the body and a reaction takes place: (1) Complete restitution, or sterilization; (2) partial restitution, or incomplete sterilization; (3) death. It is in the large class of chronic diseases, ranging from the recrudescences of mucous membrane infections to the old sinuses, remnants of abdominal, thoracic, and bone surgery, that vaccines have their most successful and legitimate use.

Four of the five cases illustrate the chronicity of infectious processes, with their periodicity of increased virulence and intervals of semiparasitism. The social and economic effectiveness of the individual is greatly reduced by these infections. This group crowd the offices of physicians. In each attack the usual old methods of procedure are used. Much can be done to relieve this monotony by intelligent use of vaccines.

Some of the more important conclusions in the summary are:

Vaccine therapy is an indispensable adjunct to our modern methods.

Owing to our lack of standards, due not only to media on which bacteria grow but also to the difference in virulence, particularly of the pneumococcus, pneumobacillus, typhoid and colon bacillus, the question of dosage as well as results will be variable.

The recurrence of infection is one of the prime difficulties in advocating this treatment to the layman. We naturally cannot guarantee permanent immunity against any infectious process.

To institute their use successfully (vaccines), the clinician should be in touch with the laboratory in which his vaccines are made.

The indiscriminate use of stock vaccines will be gradually replaced by the use of autogenous vaccines carefully planned in consultation with the laboratory in which they are made.

**Austrian: The Effect of Hypersensitiveness to a Tuberculo-Protein upon Subsequent Infection with Bacillus Tuberculosis.** *Bull. Johns Hopkins Hosp.*, 1913, xxiv, 11.

By Surg., Gynec. &amp; Obst.

The author's interest in this problem was brought about largely by a series of monographs by Romer (P. H. Romer, *Beitr. z. Klin. d. Tuberk.*, 1908, xi, 79). In order to test the validity of his assertion that the hypersensitive state was responsible for the immunity, the author carried on a large series of experiments on guinea pigs. The tuberculo-protein used for sensitization in experiments was made according to the modification of the technique as amended by Baldwin. Three strains of human type tubercle bacilli, H39, obtained from the Sara-



nac Laboratory, and Ha and Hb, isolated from the sputa of two patients ill with tuberculosis, were used for the inoculations. The results of the experiments are far too exhaustive and technical to allow of summarizing, but in the main it is clear that the evidence furnished by the various series of experiments demonstrated the fact that sensitization of tuberculo-protein had definitely diminished the resistance of the animals to infection with living bacilli of the human type. Mindful of the fact that tuberculous animals, though immune to reinfection with small numbers of bacilli, are less resistant to reinfection with larger numbers of the organisms, a second series of guinea pigs with parallel series of control animals were infected with similar doses of the strain of tubercle bacilli used in the preceding experiments. The findings in these are a confirmation of those already noted. Although the infecting doses of tubercle bacilli were small, the already sensitized animals showed more extensive disease than did the non-sensitized controls. Rabbits which are relatively insusceptible to infection of the human type of tubercle bacillus were used also in a second series of inoculations, and the results were unique, for, so far as the author has been able to determine, an acute lethal tuberculosis had not previously been produced in rabbits with a small infecting dose of human type tubercle bacillus. Several of the sensitized rabbits used developed a clinical picture described by Theobald Smith in rabbits inoculated with the bovine type of the organism. Eight of the sensitized animals developed dyspnoea and five died from tuberculosis within 67 days after inoculation. In five sensitized and in two control animals tubercles developed at or near the site of the intravenous inoculation.

For the present the following conclusion seems justified: Hypersensitiveness produced in guinea pigs and in rabbits by sensitization with a protein obtained from the bacillus tuberculosis, human type, by water extraction, exerts a baneful or a neutral influence on a subsequent tuberculous infection. Whether or not a similarly produced condition of hypersensitiveness would influence differently the course of infection with a very few organisms cannot be stated.

GEORGE E. BEILBY.

#### **Hartoeh: The Rôle of Albumin in Anaphylaxis**

(Ueber die Rolle des Eiweisses bei der Anaphylaxie).

*Petersb. med. Ztschr.*, 1913, xxxviii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the question of anaphylaxis, and gives the views expressed by various workers in this line to explain the cause. It is a question what form of albumin causes the trouble. Some authors believe it to be due to the peptones and others to diamino-acids. The author then attempts to explain the infectious diseases by over-sensitiveness, on the part of the individual, to the albumin formed by the bacteria. During the incubation period the corresponding antibodies develop. When these combine with the antigen, by aid of the comple-

ment, toxic products are produced from the bacterial albumin, the action of which causes the symptoms of the disease. He considers anaphylaxis the increased power of the organism to digest and neutralize the corresponding parenteral living bacterial albumin, as well as the cause of the disease. Anaphylaxis is a preliminary stage of immunity.

A. HART.

#### **Dale: The Anaphylactic Reaction of Plain Muscle in the Guinea Pig.** *J. Pharmacol. & Exp. Therap.*, 1913, iv, 167.

By Surg., Gynec. & Obst.

This is a description of an original piece of work. In the introduction, the author enumerates the hypotheses concerning the causes of anaphylactic shock in the guinea pig. He notes the theory of sessile receptors and explains briefly the more recent view of the action by a poisonous product of partial proteolysis, either through a specific ferment or other digestive action. Because of certain objections to this fermentative action, Dale notes two main questions at issue: first, does the reaction take place in the circulatory fluids or in the responsive tissues; and second, is the shock due to a physical change or to the production of a poisonous digestion product.

To answer the first question, the author points out that it suffices to isolate muscle and free it from body fluids. He mentions his method and states that he selected for his experiments the uterine horn from a virgin guinea pig, emphasizing that it is necessary to use very small and slender uteri. He states at the outset that his method of procedure differs from that of Schulz, who previously made somewhat similar experiments and whose work and conclusions he discusses fully. Schulz regards the anaphylactic reaction as an exaggeration of the normal response of plain muscle to large doses of native sera or other protein-containing bodies, and Dale believes that Schulz is confusing two distinct though similar phenomena, namely; the toxic action of large doses of fresh sera and other proteins and the specific action of minute doses of the sensitizing protein on the sensitized animal.

A number of tracings are given and clear descriptions of the same. The non-action of sera or proteins other than the sensitizing one is graphically shown, and of particular interest is the immediate and marked response to the latter substance, the action occurring with as little delay as that of drugs applied under the same conditions. A dilution of 1 in 1,000,000 suffices to give a definite, though not a maximum, response.

Some experiments were made showing the effect on the anaphylactic muscle of repeated doses of the sensitizing substance. These show that a single dose, if it will cause a maximum response, will remove completely the sensitiveness so that later doses are without effect, provided that non-toxic preparations or doses below those having an action on normal tissues are used. This process of desensitization probably corresponds to the anti-anaphylaxis of the whole animal.



It has been shown by previous investigators that guinea pigs may be anaphylactic to three proteins at the same time, and that a non-fatal injection of one of the antigens leads to antianaphylaxis to that one alone, with subsequent typical reactions to the others. Dale's observations lead him to point out that a guinea pig receiving small simultaneous injections of several different sera acquires to none of them the high degree of sensitiveness which might be predicted from the injecting of any one alone. He suggests that a more extended incubation period might be necessary under these conditions. He also points out that desensitization to one antigen is not wholly without effect on the sensitiveness to others, though there is some degree of independence.

In animals immunized to horse serum, Dale found, confirming other experimenters, that such immunity may coexist with a well-marked supersensitiveness of plain muscle, but that the specificity is qualitatively, not quantitatively, the same; also, that with time, there is a gradual desensitization of the tissue of the immune animal distinct from its protection by circulating antibody.

Guinea pigs may be passively sensitized by the injection of serum from an animal made actively anaphylactic or by injection of serum from immunized animals. This sensitization is not immediate, 24 hours, perhaps less, being an average interval. The time to produce anaphylaxis has been considered that interval necessary for fixation of specific antibody to the tissues. Dale's problem here was, if this view is correct, to show sensitiveness in the uterus of such a passively sensitized guinea pig. His experiments show that this was actually present, and that such a muscle could be desensitized by the first dose, but that the sensitiveness of the muscle of such a passively sensitized animal was not as marked as that from an animal made actively susceptible. He also made the observation that after desensitization it is possible to effect a passive sensitization of the uterus in vitro, and that the first subsequent dose desensitized the muscle. This experiment was done with the uterus of an animal actively, and one passively, sensitized. A normal uterus soaked in a solution of horse serum did not give the decided sensitization. By perfusing the organ with a solution of such serum, a result was obtained, after about five hours, which suggested strongly those reactions obtained from muscle taken from sensitized animals, including the desensitization.

On the period which must elapse before sensitization could be detected, Dale found that the susceptibility occurs first between the sixth and eighth day after the sensitizing injection and increases rapidly up to the twelfth day.

There are various features of anaphylactic shock in guinea pigs observed which seem to be unrelated to the effect on plain muscle. By a series of nicely controlled experiments Dale attempted an explanation of the death. He concludes that, for the immobilization of the lung, or as previous writers have

stated it, a valve-like closure of the bronchioles, which is the cause of death of anaphylactic guinea pigs, there is no necessity for assuming any other than the immediate action of the antigen on the sensitized muscle.

WALTER H. BUHLIG.

## BLOOD

**Yatsushiro: An Experimental Study of Emigration of Leucocytes in Inflammation** (Experimentelle Studie über die Emigration von Leucocyten bei der Entzündung). *Frankf. Ztschr. f. Pathol.*, 1913, xii, 80.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

By a series of experiments, the author has demonstrated the untenability of the physical theory of leucocyte emigration and has furnished the proof that chemotaxis of itself is a sufficient explanation of this phenomenon. Even the assumption of a primary injury of the vessels was proven untenable, causing the fall of the last prop of the physical theory.

By the employment of an agent, aleuronate, which has only chemotactic action, the author was able to produce emigration of white blood corpuscles and to trace them through the wall of the vessel, from the venous lumen to the surrounding tissues. Yet the phenomena which in inflammatory processes accompany emigration of leucocytes did not appear. In these inflammatory processes emigration is always associated with dilatation of the small veins and capillaries and resultant retardation of blood circulation, increase in blood pressure, and exudation. In the author's experiments these phenomena, by which the physical theory explains emigration, were absent. On the contrary, instead of dilatation of the vessels, which is regular in inflammation, the wall of the vessels showed collapse, even though slight, at many points where it had been touched by the aleuronate. This retardation of blood circulation is of itself rejected as a causal factor of emigration.

The confinement of leucocyte emigration to the area treated with aleuronate is proof that a supposed increase of blood pressure cannot come into consideration as a cause of emigration; for an increase of blood pressure within so circumscribed an area is unthinkable under the hydrodynamic law.

In a second series of experiments, in which the author did not employ aleuronate but confined himself to exposing the walls of the vessels, the analogous phenomena of emigration reappeared. This, therefore, further substantiates the argument in favor of the chemotactic theory, as it is impossible, in this case, to point to any modification of blood circulation, while in the first series of experiments a slight pressure by the aleuronate is barely possible. The outcome of these experiments furthermore contradicts the other theory that precipitation of fibrin on the inner wall of the vessel is a prerequisite of leucocyte emigration.

The experiments were all performed on one of



the larger abdominal veins of a rabbit, so that it has been shown that leucocyte emigration can also occur from the larger vessels.

GENEWAIN.

**Krabbel: Tubercle Bacilli in the Blood Stream in Cases of Surgical Tuberculosis** (Tuberkelbacillen im strömenden Blut bei chirurgischen Tuberkulosen). *Deutsche Ztschr. f. Chir.*, 1913, cxx, 370.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a résumé of investigations on the subject, and finds that the results are conflicting. Thirty cases of surgical tuberculosis were examined by the Schnitter method. Ten cc. of blood was carefully mixed with 20 cc. of 3 per cent acetic acid solution and allowed to stand for a half hour. It was then centrifuged and the supernatant fluid drawn off, the sediment diluted with a few cubic centimeters of water; two to five times as much 15 per cent antiformin solution was added, thoroughly mixed, and then centrifuged. The sediment was washed and then spread on two slides.

His results are as follows: 12 out of 18 cases of bone tuberculosis were positive, 66 per cent; 1 out of 5 cases of tuberculous glands, 20 per cent; 1 out of 4 cases of skin, mucosal and synovial tuberculosis, 25 per cent. The low percentage of positive findings in gland tuberculosis is explained by the fact that the process is localized, its entry having been through the tonsil or mucous membrane. In bone tuberculosis the infection has come through the blood stream. The age of the patient and the duration of the disease are unimportant. The prognosis is not affected by the presence of the tubercle bacilli in the blood, excepting in such cases where clumps of the bacteria are found. The author believes that in those cases in which tuberculosis of the lung does not account for the bacteræmia, tuberculosis of the bone is a safe diagnosis.

HAGEMANN.

**Schneller: Uric Acid Determination in the Urine and Blood** (Zur Methodik der Harnsäurebestimmung im Urin und im Blut). *Ztschr. f. exp. Pathol. u. Therap.*, 1913, xii, 341.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Although the tedious methods of Ludwig, Salkowski, and Krüger and Schmidt give equally exact results, the author found the Röthlisberger and the Ruhemann apparatuses inexact for a quantitative determination of uric acid. Experiments showed that none of the four methods was reliable where the blood contained only a few milligrams of uric acid. Schneller has a more accurate method. He adds neutral formaldehyde to the blood before boiling it, in order to avoid bringing down uric acid when the albumin coagulates. In this way the uric acid combines with the formaldehyde to form formaldehydric acid. The precipitation of the albumin is brought about with potassium phosphate or potassium biphosphate. The quantitative determination of uric acid is then made with the filtrate according to Krüger and Schmid. With this method .5 mg. of uric acid in

100 cc. blood is detectable. In conclusion the article deals with a lengthy description of the formaldehyde method.

ELISABETH WEISHAUPF.

**Nolf: A New Theory of Blood Coagulation** (Eine neue Theorie der Blutgerinnung). *Ergebn. d. inn. Med. u. Kinderh.*, 1913, x, 275.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In this article, a comprehensive account of Nolf's theory of blood coagulation is given, a theory which is most deserving of attention. In contrast with the hitherto accepted theories, it looks upon blood coagulation not as a fermentative process but as one of simple reciprocal elimination of the colloidal factors in the coagulative process. These coagulative factors—of which there are three; thrombozyme, thrombogen, and fibrinogen—are contained in the plasma in a certain equilibrium of solution. They give to the plasma the important property of spontaneous coagulation. In the process of coagulation, these coagulative factors themselves completely disappear. There remain fibrin and thrombin—the latter in solution in the serum and therefore to be regarded as a product of coagulation. Any influence or any substance which has the power of disturbing the equilibrium of the colloidal coagulable solution and thereby promoting its insolubility is called thromboplastic. Thromboplastic (i. e. coagulant) influences proceed from extracts of the tissues, other colloids, and from contact with insoluble bodies (superficial action). In the circulating blood, antithrombin, which is derived from the liver and has an inhibitive effect on coagulation, acts as a regulative check upon the thromboplastic influences. In conclusion the article considers the relations between thrombolysis and pathological coagulation of the blood.

HARTERT.

**Bluhdorn: The Therapy of So-Called Uncontrollable Hæmorrhage in Infancy** (Die Therapie sogenannter unstillbarer Blutungen im Säuglingsalter). *Berl. klin. Wchnschr.*, 1913, l, 14.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

These hæmorrhages are absolutely not influenced by the ordinary surgical measures, because we have to do with anomalies of blood coagulation. Three cases cited from the University Clinic of Göttingen, which represent three different types of this disease, give a picture of the serum calcium therapy used.

Case 1. *Melæna neonatorum* (three days old). Injection of 2.5 cc. horse serum (diphtheria serum) and internal medication of 0.5 cc. calcium acetate every two hours, 3 gm. in the first 12 hours, then in decreasing doses. The profuse hæmorrhages with which the child entered the clinic stopped immediately after the injection.

Case 2. *Henoch's purpura* (six months old). Hæmorrhages into the intestines and tissues appeared in a child which was brought to the clinic because of marasmus. After excluding a possible invagination, 3.8 cc. diphtheria serum were injected and 2 gm. calcium chloride were administered within 10



hours. The hæmorrhages into the intestine promptly ceased, while those into the tissues continued. After further administration of calcium, and on the third day a second injection of 3.8 cc. diphtheria serum, this also gradually ceased.

Case 3. Hæmorrhage of the umbilical cord, with sepsis, followed by a severe icterus (10 days old). In this case it was determined in a test tube that the coagulation time of the umbilical blood of the patient was about 7 minutes; of normal blood, about 2 minutes; of a mixture of umbilical blood and serum in equal parts, about 2 minutes; of umbilical blood mixed with coagulated blood, about 50 seconds. Serum was injected subcutaneously about the umbilical wound, from which, as in the preceding case also, a rather severe hæmorrhage resulted from the needle puncture; a tampon soaked with human blood and serum was put directly upon the wound, and 4 gm. calcium chloride were given internally per day. In this case also there was a prompt result and cure.

In *melæna neonatorum* there is, according to the researches of Whipple, a lack of thrombin, while fibrinogen and lime salts are present in the usual amounts. In the case of Henoch's purpura we have to do with a diminution of lime salts. In the case of septic hæmorrhage from the umbilical cord no diminution in either of the three constituents could be determined. In these cases treated with lime salts or gelatin injection no results could be achieved heretofore; they always resulted in death from hæmorrhage within from two to three days. It was possible to effect a cure by the combination of calcium with serum injections. The diphtheria serum, because of the danger of anaphylaxis in a subsequent injection, should be freshly prepared; but this is possible only in clinics. In practice, the diphtheria serum is relatively the freshest and most easily procurable for treatment. Of the calcium salts, the soluble calcium chloride or calcium acetate, should be preferred to the insoluble calcium lactate or citrate, because they are more easily resorbed. It should be given in amounts of 3 to 6 gm. during 24 hours, preferably in a 5 per cent solution (Calc. acet. 10.0; liq. ammon. anis. 2.0; gummo arab. 1.0; saccharini q.s.; aquæ ad. 200.0). After effects on the gastro-intestinal tract (loss of appetite and tympanites) do not result, because of the short time it is administered. There is some objection to the subcutaneous administration of calcium gelatin advised by Miller and Saxl because of the after effects (pain and fever). STETTNER.

**Clowes and Busch: Treatment of Hæmorrhage by Means of Precipitated Blood Sera, Together with the Method of Estimating the Activity of the Latter.** *N. Y. M. J.*, 1913, xcvi, 16. By Surg., Gynec. & Obst.

Blood serum, even when preserved sterile, rapidly loses its efficacy as an agent for checking hæmorrhage. Fresh serum precipitated by means of a mixture of acetone and ether, following a procedure

previously employed by Clowes in the preparation of certain enzymes, yields an anhydrous, sterile, soluble powder which possesses over blood serum the great advantage of being readily available and apparently absolutely stable. Thrombin, or fibrin ferment, the agent which precipitates fibrinogen in the normal process of blood coagulation, is present in this precipitated product in an extremely active form and (probably owing to the complete removal of water) appears to retain its activity indefinitely. Precipitated sera, tested 12 and 18 months after preparation, were found to exert a clotting action on citrated plasma fully equal to that of freshly precipitated sera and superior to that of fresh blood sera, while sera of the same origin, preserved sterile but in a fluid state, exerted practically no clotting effect after three months. The precipitation of serum by this means should not be attempted without adequate laboratory facilities, and owing to the variations exhibited in the behavior of different sera, one or two preliminary experiments should always be made. The product, if properly prepared, settles quickly, and when separated in a dry state dissolves fairly readily in a volume of water less than half that of the original serum. Owing to the nature of the process employed, the precipitated product is absolutely sterile unless subsequently contaminated.

The clinical results obtained with precipitated sera indicate that these preparations are fully as effective as the most active fresh sera. About 150 cases of hæmorrhage have been successfully treated, and in the few cases in which no result was obtained it has generally been possible to demonstrate that a lack of fibrin ferment was not the cause of the persistent hæmorrhage. In the large majority of cases of hæmorrhage of the newborn and hæmophilias, gastric and intestinal hæmorrhage, hæmorrhages during and after tubinections, tonsillectomies, prostatectomies, etc., one or two doses (each equivalent to 10 cc. of fresh serum) dissolved in sterile water and injected subcutaneously have sufficed to check the bleeding. Repeated doses at intervals of four to eight days have proved of value in certain cases of pulmonary hæmorrhage, apparent cures having been reported after periods of several months. It is interesting to note in this respect that no reactions of an anaphylactic type have been exhibited, even after repeated injections of the precipitated product derived from horse, as well as human and rabbit serum. The increased activity of the fibrin ferment in precipitated serum as compared with fresh fluid serum may possibly be explained on a physicochemical basis.

**McPhedran and Orr: A Case of Hæmolytic Jaundice with Splenomegaly.** *Canad. M. Ass. J.*, 1912, iii, 14. By Surg., Gynec. & Obst.

Minkowski and Bettman described, in 1900, a series of cases of jaundice in which the patients were not affected by the jaundice and which also showed other interesting features, such as enlargement of



the spleen with hyperplasia and hyperæmia; slight enlargement of the liver without pathological change in its parenchyma or bile passages; iron pigment confined to the kidneys and similar to that found in pernicious anæmia; a blood picture of secondary anæmia without nucleated reds, but with polychromatophilia and with a fairly large number of large red cells which were probably quite young red cells, and also leucocytosis.

Minkowski considered that the whole process depended upon a primary lesion in the spleen, that the blood cells were destroyed there, and that jaundice came from increased pigment in the blood stream from destroyed red blood cells.

Chauffard had observed that the red blood cells were not so resistant to hypotonic sodium chloride solutions as were those of the normal individual. He also observed that when a stain such as Unna's polychrome methylene blue were dropped onto the skin and the blood obtained from a prick through the drop, so that the cells might be stained without fixation, many of the cells showed a curious reticular granulation. Vaughn, who first described this finding, thought the presence of so many such cells indicated new blood formation.

The urine contained urobilin but no bile pigments. The stools were normal in color. They often had attacks of gallstone colic, but many were operated upon and no stones were found.

The authors present a detailed study of their one case. It was similar to those described by Minkowski and Bettman.

The spleen is generally thought to be the seat of the trouble, and the authors believe that splenectomy should result in its amelioration.

FLOYD RILEY.

**Geissler: Concerning Blood in the Spinal Fluid** (Ueber Blut in der Spinalflüssigkeit). *München. med. Wchnschr.*, 1913, lx, 121.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The examination of the blood-tinted fluid not uncommonly presents great difficulties when one endeavors to discover the source of the bleeding. Before proceeding to an interpretation of the presence of blood, it is necessary to make sure of an exclusion of artificial hæmorrhage due to puncture of the venous plexus. In artificial hæmorrhages the outflowing liquid loses its discoloration after a few cubic centimeters of it have been shed, and the blood quickly coagulates if the liquid is gathered in a test tube. In pathological infusion of blood, on the other hand, the blood corpuscles are precipitated as a sediment. If the blood in the drained liquid coagulates, and if the fluid drained some time later still remains tinted, we must assume the presence of a fresh pathological hæmorrhage upon which a further artificial hæmorrhage has supervened without, in this case, being of any significance. The following possibilities come into consideration:

1. The presence of blood may be caused by injuries (fractures of the base of the skull) or by

inflammatory or neoplastic processes affecting the meninges, provided that there has been a lesion of the arachnoid. Apart from these destructive changes, processes which produce a diminution of the area of the spinal canal and thereby lead to stasis of the liquid in the caudal section may cause hæmorrhage from the congested blood-vessels by diapedesis. Accordingly, as the color of the liquid varies through the scale from deep red to yellow, we may draw approximate conclusions with respect to the age of the blood infusion; a yellowish color will indicate an old hæmorrhage. The degree of color also permits of certain other conclusions, such as whether the hæmorrhage was caused by ulcerative processes (tuberculosis, tumor, lues) or simply by changes that led to physical displacement.

2. A pathological content in the spinal fluid may occur together with one of artificial origin. If the first portion of the liquid drains off slowly, without high pressure, and coagulates more quickly than a later portion which flows out under a steady high pressure, we must assume both pathological blood content and an artificial lesion of the venous plexus.

3. The older the hæmorrhage the yellower will be the tint of the liquid; this is known as xanthochromy, and points to a hæmorrhage that has occurred some time back. It is not necessary to say that weeks must have passed since the occurrence of the hæmorrhage to account for the presence of xanthochromy; in one case it could even be shown that the yellow tint had appeared within one week. Xanthochromy has been observed in connection with hæmorrhages of various etiology, and also in tuberculous meningitis and epilepsy. The change to the yellow tint is the result of modifications in the pigment of the blood, the details of which are still a matter of dispute.

PÓLYA.

**Milne: Anæmia Caused by Hæmorrhage** (Ueber Blutungsanämie). *Deutsche Arch. f. klin. Med.*, 1913, cix, 401.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Artificial hæmorrhage was performed on 24 rabbits and 6 cats in order to determine whether a typical form of anæmia could be produced and to observe whether the regeneration takes on a form other than that in the toxic anæmias as reported by Hanis, Ritz, Morowitz, and Meyer. The hæmorrhages were performed daily or at longer intervals. The hæmoglobin reached the normal more slowly than did the erythrocyte count. Two to three days after the hæmorrhage there were nucleated reds and basophilic erythrocytes present. If the bleeding was stopped for some time, the latter cells would disappear in most cases. The granular basophilic erythrocytes are therefore not characteristic for toxic anæmias. The granulation is probably due to particles of chromatin from the disintegrated nucleus.

When the anæmia was not very pronounced, only scant regeneration of blood elements occurred in liver, spleen, and kidney. In extreme anæmia



(erythrocytes below 2,000,000, hæmoglobin below 30 per cent) lipæmia (4 to 10 per cent) occurred. The fat stained black with ether and osmium. In such cases fatty infiltration of the organs was quite pronounced. The liver showed extreme fatty degeneration and central necrosis, which is probably also due to the insufficient oxidation. Practically all of the characteristics of toxic anæmia can be reproduced by hæmorrhage. SCHLECHT.

**Franke: Hæmophilia and Its Treatment with Rhodalcid** (Ueber Hämophilie und ihre Behandlung mit Rhodalcid). *Deutsche zahnärztl. Wchnschr.*, 1913, x, 65. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In a case who presented hæmophilia, Franke prescribed rhodalcid to be taken for a week or two, one tablet two to three times a day, before he extracted a tooth. Bleeding after the extraction was slight and of brief duration. Franke then had the patient take rhodalcid for a whole year following. Unpleasant by-effects were not to be observed. On the contrary, the general condition of the patient showed a marked improvement. HERDA.

#### BLOOD AND LYMPH VESSELS

**Sabella: Phlebitis in Typhoid Fever** (La flebite nella febbre tifoide). *Morgagni*, 1913, lv, 97. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This article is a review of our present knowledge concerning post-typhus inflammation of the veins. It is generally accepted that phlebitis is caused by micro-organisms. Opinions differ only on the question as to whether the causal agent is represented by the bacillus Eberthi or by other bacteria, such as bacillus coli, streptococcus, and staphylococcus; or whether, finally, the toxins of these bacteria may not be the cause of the affection. In the author's opinion the bacillus Eberthi must be considered the causal agent of the disease. Phlebitis occurs in the stage of convalescence and generally attacks the left lower extremity, usually the vena femoralis. In addition to the well-known symptoms (fever, pains, rigor, and cedema) some authors mention extravasations into the knee joint and leucocytosis as clinical phenomena. Prognosis, on the whole, is favorable; but chronic cedema of the limb, inflammation of the arteries, and even embolism may appear as complications. Treatment should follow the well-known conservative method; the method of double ligature of the thrombosed vessel which has been proposed by Robineau and Schlesinger, in the author's opinion, has not been sufficiently tested to admit of recommendation at this time. HERHOLD.

**Rohde: A Simple Device for Continuous Intravenous Injection** (Einfacher Apparat zur Erzielung eines gleichmässigen intravenösen Einlaufs). *Ztschr. f. biol. Techn. u. Methodik*, 1913, iii, 85. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author presents an improvement on Kretschmer's apparatus for intravenous injection. By

this apparatus it is possible to read off the quantity of solution injected per second. Air pressure is applied on top of the reservoir containing the fluid to be injected. There is an attachment which also gives warning when the flow into the vein is not continuous or has become slower in the rate, thus permitting faulty connections to be easily and quickly corrected. NEUMANN.

#### POISONS

**Claypole: On the Classification of the Streptothrices, Particularly in Their Relation to Bacteria.** *J. Exp. Med.*, 1913, xvii, 99.

By Surg., Gynec. & Obst.

Classification and study of the moulds or filamentous fungi are difficult because of the diverse opinion as to nomenclature of both species and genera. Although the matter is not settled botanically, it seems best to adopt the term streptothrix for the genus and streptothricosis for the disease. The various strains show marked differences in cultural characteristics — character of the mycelia, fragmentation, and staining reactions. Some are acid-fast and others are non-acid-fast. It is seen that those forms which show long mycelia and very slight fragmentation are non-acid-fast, and those which are markedly fragmented (bacillary and coccoid fragmentation) and have very short mycelia are acid-fast. This suggests the similarity of the fungi to the bacteria (*B. tuberculosis*, *B. lepræ*, etc.) and raises the question whether, indeed, they do not all belong to the one genus. This seems to be borne out by fixation experiments. The author found that the immune serum of the largest branched, non-acid-fast streptothrices gave decreasing fixation with the various antigens as the bacillary and acid-fast forms were approached, failing to fix the antigen of *B. tuberculosis*. When the immune serum of *B. tuberculosis* was used, the reverse was true. Hence it would seem biologically reasonable to look upon this group of Streptothrices as representing an ancestral type that gave rise to the higher fungi and to true bacteria, and not as being themselves higher bacteria. JAMES F. CHURCHILL.

**Thiele: The Pathogenicity and Virulence of Bacteria.** *Lancet*, Lond., 1913, clxxxiv, 234.

By Surg., Gynec. & Obst.

In this paper the author describes personally conducted experiments and personal observations, and arrives at the following conclusions:

1. Ferments form an important normal mechanism of defense against bacterial invasion. The ferments performing this important function are: (a) The normal panenzyme, (b) the slightly differentiated specific enzyme, (c) the thermolabile specific coenzyme or amboceptor, and (d) the thermostable specific coenzyme or amboceptor. These last two adjuvate and accelerate the action of the ordinary enzyme. The action of the ferment is to bring about proteolytic digestion of the bacteria.



2. Exotoxins and endotoxins are bacterial protoplasm and are not primarily toxic per se, but only become so when acted upon by the ferments.

3. The action of the ferments on the bacterial protoplasm is to produce toxic early proteolytic digestion bodies. These bodies, besides being toxic to the animal, are also aggressive in the sense of Bail, i. e. are antiphagocytic.

4. The action of this toxic substance, besides being aggressive, is to produce (a) in large amounts, death; (b) in lesser amounts, fall of temperature; and (c) in small amounts, fever. This substance is the cause of death in all bacterial infections.

5. The virulence of a bacterium is dependent upon the power of exuding around itself a zone of its cytoplasm, which remains in position and acts as a protective shield. The production of a zone of ferment equilibrium in this shield protects the bacterium itself from the penetration of the ferment. The shield thus acted upon is also aggressive to phagocytosis.

6. Pathogenicity is due to (a) the virulence of the bacterium, and (b) the relative activity of the ferment to the bacterium. Thus we should say that immunity is due to ferment action and phagocytosis, i. e. it is cellulo-humoral. D. C. BALFOUR.

#### SURGICAL THERAPEUTICS

**Finzi: Experiments with Ionic Medication.** *J. Rönt. Soc.*, 1913, ix, 5. By Surg., Gynec. & Obst.

The author has endeavored to determine experimentally the path various ions take when introduced into living tissue. For this purpose he passed a current of 6 milliamperes for a definite time through pads of cotton wool saturated with the solution containing the ions to be used, which pads were in contact, with the skin of the animals experimented upon. The patch of tissue underlying the pad was then excised and the presence of the ions therein determined by staining and microscopic examination.

In the case of copper and ferric ions it was found that these were deposited almost entirely in the epidermis. Ferro- and ferri-cyanide and ferrous ions penetrated deeply; calcium and probably zinc ions were deposited in and beneath the corium. Attempts to stain with sulphide and metallic ions failed. In the case of hydrogen ions the tissues, penetrated, stained deeply with basic dyes, whereas with hydroxyl ions they failed to do so.

In the course of the experiments it was also ascertained that when the ion penetrated deeply the milliamperemeter showed more current to be passing under precisely the same conditions than if it was deposited superficially. Ferricyanide ions could be shown to have passed into joints such as the knee. Cocain ions were driven in at the anode, but anæsthesia thus produced was found to be very transitory, and was followed in a short time by hyperæsthesia and hyperæmia, and later by a brown pigmentation, rendering its use as a local anæsthetic inadvisable. ADOLPH HARTUNG.

**Loeb, Lyon, McClurg, and Sweek: Further Observations on the Treatment of Human Cancer with Intravenous Injections of Colloidal Copper.** *Interst. M. J.*, 1913, xx, 9.

By Surg., Gynec. & Obst.

This paper represents a continuation of the study of the clinical effects of colloidal copper on human cancer. The authors have followed in close detail the course of nineteen patients, all afflicted with cancer and all subjected to colloidal copper injections.

The histories which they report confirm essentially their former conclusions. Rapidly growing tumors which lead to extensive metastases in the internal organs, and those in which cachexia is pronounced, cannot be benefited by treatment. In the large majority of all other cases which must be considered inoperable, the continued intravenous injections of colloidal copper lead to a gradual retrogression of the tumor, and in the majority of cases there is noticeable a marked diminution in the pain from which the patient suffers. Furthermore, more recent observations confirm the statement made in their first publication, namely, that in a number of cases there is a gradual decrease in the effect of the injections. This slowing in the progress of retrogression of the tumors became more pronounced the further the work progressed, and in the majority of the older cases it is doubtful whether any progress was made in the last few weeks. In one case, which had retrogressed quite markedly, there was perhaps a further extension of the growth within the last two weeks. It is not improbable that in this case the repeated cuts made into the tumor for the purpose of removal of necrotic material may have stimulated the growth-energy of the cancer. This gradual diminution in the efficiency of the intravenous injections has, however, as yet not become apparent in every case. On the contrary, there were a number of cases in which the healing processes became perhaps more marked after the twentieth injection.

The authors regard as a most important result of their investigations the conclusion that we now have the means at hand to cause a gradual, although only partial, retrogression of the large majority of the inoperable cancers, provided they have not yet progressed to the last stage of the disease. On the other hand, they believe that the action of the intravenous injections of colloidal copper is too slow to render it probable that in the large majority of cases a cure will be accomplished by this mode of treatment. At present it is still too early to make any definite statement as to the ultimate fate of the patients under treatment. M. G. SEELIG.

**Loeb, Fleisher, Leighton, and Ischii: The Influence of Intravenous Injections of Various Colloidal Copper Preparations upon Tumors in Mice.** *Interst. M. J.*, 1913, xx, 16.

By Surg., Gynec. & Obst.

Hand in hand with the clinical study of the effects of colloidal copper, Loeb and his coworkers



have studied the effect of colloidal copper on mice inoculated with carcinoma. They used four different solutions of colloidal copper, which they designate as solutions A, B, C, and D, and they promise to describe in detail in a future publication the method of preparing these solutions.

In practically all cases in which a strong solution of copper was injected the tumor either did not grow during the period of the injections or growth was much retarded. It was very rare, however, for an actual retrogression to occur, and it was necessary to inject the mice every day in order even to retard growth. If a weak solution of colloidal copper was used it exerted no influence on the tumor. But even when a strong solution was used it was not possible to prolong the effects of the injections after the seventh day. When the injections were stopped the tumor began to grow as rapidly as did an untreated tumor of the same size.

In addition to the experiments with colloidal copper the authors carried out an additional set of experiments, based on the injection of copper casein, the action of which drug is similar to, but more variable than, colloidal copper. The casein preparation does not inhibit the growth of the tumor for as long a period, nor does it check growth as completely as does the colloidal preparation.

M. G. SEELIG.

**Meincke: Chemotherapy of Malignant Tumors**  
(Die Chemotherapie der malignen Tumoren).  
*Deutsche Ärzte-Zeit.*, 1913, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Wassermann treated mice afflicted with malignant tumors with selenium-eosin, because the salts of this metal and tellurium are quickly reduced by the action of living cells, especially those which are proliferating rapidly. Neuberger used as the basis of his attack the tendency of carcinomatous cells to disintegrate and the property of the heavy metals to increase it. He made organic combinations of the heavy metals. The tumors in mice softened under this treatment and disintegration took place because of the death of the cell nuclei. The great danger in this treatment is that the therapeutic and toxic doses are so nearly identical, and that the body becomes overlaid with the toxins set free by the autolyzed tumor cells. The drug can be applied to man only with great caution.

RALF LUTZ.

## ELECTROLOGY

**Barclay: The Diagnosis of Gastric and Oesophageal Affections by X-Ray Methods.** *Med. Chronicle*, 1913, lvii, 187.

By Surg., Gynec. & Obst.

In this article, X-ray methods, problems, values, and difficulties are pointed out in a manner well classified and easy to follow. Considerable attention is given to motor conditions of the oesophagus, stomach, and duodenum, both in health and in various stages of disease.

Examinations are made in the upright position

by the fluoroscopic method in preference to the radiographic, the latter being useful only in recording one or another interesting phase of the formations or actions already viewed. The postero-anterior ray projection is the author's choice for stomach work, and for oesophagus the first oblique position is used. The preferred opaque mixture is bismuth subcarbonate in bread and milk or in porridge.

In the oesophagus the cause and appearance of spasm, obstruction and dilatation in various positions and stages are explained. Although no special attempt is made to furnish exact data by which one or another cause of obstruction can be differentiated, except in case of aneurysm or large new growth, the fact of definitely showing the presence and site of obstruction is considered of great diagnostic importance. As compared with instrumentation the X-ray has many points of advantage. Bougies should not be used where the lower end of the bismuth shadow is not distinctly funnel-shaped.

In the discussion of the radiology of the stomach a sharp line is drawn between atony, which is an intrinsic muscular endowment, and peristalsis, a movement controlled by nerve impulses which, cut off by disease along the nerve trunks, may result in peristaltic absence. The pylorus is regulated by some sensory mechanism in the duodenum, the irritation of which usually produces an abnormal pyloric relaxation. Reverse peristalsis is seldom seen, but when present is considered a sign of gross disease.

The author then treats the subjects of atony and pyloric obstruction and will continue stomach diseases in a later issue.

HOLLIS E. POTTER.

**Haudek: The Diagnostic Value of Gastric Antiperistalsis.** *Arch. Rönt. Ray*, 1913, xvii, 312.

By Surg., Gynec. & Obst.

The author introduces the subject of antiperistalsis as a symptom in radiologic diagnosis which has been given particular attention by various authors but one which is still variously interpreted.

Although the earlier observers saw reverse waves so frequently in cases of pyloric obstructions as to associate them diagnostically, a close review of a long list of cases of antiperistalsis with subsequent operation showed enough of them free from organic disease of the pylorus to warrant us at present to place a broader interpretation on this finding. Among the conditions referred to were the gastric crises of tabes in which no organic disease of the stomach was suspected, ulcers of the stomach at some distance from the pylorus not involving the pylorus except by spasm, and even duodenal obstructions with pylorus patent. The existence of antiperistaltic waves may therefore be due to disease of the wall of the stomach or duodenum with or without spasm of the pylorus.

Certain experiments are cited which would substantiate this interpretation aside from the confirmation of operated cases. The stomach wall stimulat-



ed mechanically or chemically at some little distance from the pylorus has repeatedly been followed by antiperistalsis.

However, considerable emphasis is laid upon the value of this symptom as a general evidence of organic disease, since it may be the only radiologic sign present in a given case.

The author concludes thus broadly:

1. Gastric antiperistalsis is a sign of some organic alteration in the walls of the stomach or duodenum.

2. Antiperistalsis is most frequently met with in pyloric stenosis, but is not an invariable concomitant of stenosis.

3. Antiperistalsis is only recognizable when the waves of contraction are of a certain amplitude; hence it is rendered more visible by any stimulus which will increase the depth of any peristalsis.

HOLLIS E. POTTER.

**Linnell: A New Technique for X-Ray Therapy.**

*N. Am. J. Homeop.*, 1913, xxviii, 24.

By Surg., Gynec. & Obst.

The author ascribes a dual therapeutic action to the X-ray—a destructive one associated with a passive hyperæmia when applied continuously for a given length of time during a series of exposures, and a stimulating and regenerative one with an active hyperæmia, if given intermittently or in flashes of longer or shorter duration and varying frequency.

This latter method, originated by Finlay R. Cook, has been used with success by the author in a variety of local and general conditions where tonic effects were desired. Amongst the conditions benefited are mentioned anæmia, neuræsthenia, arterial hypertension, incipient arteriosclerosis, and a number of eye and ear affections.

**Crotti: The Röntgen Ray in Intrathoracic Goiter and Thymus Hyperplasia.**

*J. Am. M. Ass.*, 1913, lx, 117.

By Surg., Gynec. & Obst.

Consideration is given mainly to those goiters the greater part of which lie within the mediastinum or which have intrathoracic prolongations large enough to cause symptoms. These may extend downward from the median line or from either side and compress the trachea from the front or side.

In the dorsoventral skiagram their outline can be readily traced, the parts in juxtaposition to lung tissue showing especially clear contours. Ordinarily, they cast smooth convex shadows; irregularity usually denotes malignancy. Where they press upon the trachea, this is usually evidenced by displacement of the tracheal shadow or by encroachment upon its lumen. Fluoroscopy should supplement radiography, as small goiters, which might escape detection owing to their position, may thus be discovered during the respiratory movements. Likewise, aneurysm shadows which occasionally closely resemble goiter shadows can be readily differentiated by this method.

Close examination of several operative goiter cases, which the author cites in detail, revealed hyperplastic thymus glands in the mediastinal space. Examination of skiagraphs of these cases, as well as of others previously taken, gave findings of sufficient uniformity to be of diagnostic value in this condition. A rather thin triangular shadow, superimposed upon the base of the heart like a cap and having sharp linear edges, is sufficiently characteristic to suspect an enlarged thymus. In view of the high mortality rate of these cases when operated upon, the author recommends a preliminary course of treatment by the X-ray to reduce its size.

ADOLPH HARTUNG.

**Von Noorden: Radium and Thorium-X Therapy.**

*Med. Rec.*, 1913, lxxxiii, 95.

By Surg., Gynec. & Obst.

Radium or radium emanation and thorium-X as therapeutic agents have been selected from a group of radioactive substances as being best adapted to meet the requirements of practical therapy. Their action is described as essentially an electrization of the protoplasmic constituents of the organism inasmuch as radioactive substances disintegrate explosively, and in so doing set free energy, electrical in nature.

The various methods of application which have been used are baths, inhalations, drinking, injections, and compresses, or combinations of the above. As regards their biologic activities, it was found that they increased the metabolism of fats, carbohydrates and albumen in the body, and also favored the excretion of uric acid in a high degree. Likewise they were found capable of producing marked changes in the blood and blood-forming organs.

Among the conditions favorably influenced by their use are mentioned endogenous obesity, gout, subacute and chronic arthritides (especially arthritic deformans), myalgias and neuralgias, commencing arteriosclerosis, arterial hypertension, pernicious anæmia, leukemia, insomnia and nervous overexcitability, and sexual impotency.

The contraindications to their use are cardiac weakness, cachexia, senile marasmus, Basedow's disease, diabetes, febrile conditions, hæmorrhagic diathesis, severe neurasthenia, and far advanced erythroblastic and leucoblastic conditions.

As regards dosage, there is as yet little uniformity. Thorium-X especially, given by the drinking or injection method, is apt to produce marked variation of action with comparatively small changes in the amount used, and great caution must be exercised in employing it. A combination of baths, drinking, and inhalation, as used at different sanatoria in Europe, is probably the method of choice at present in all but in blood diseases, where thorium-X is preferable. Inhalations alone, as used in the various emanatoria, are of less value, and the injection of radium salt solutions are rendered impracticable owing to the prohibitive cost.

ADOLPH HARTUNG.



## GYNECOLOGY

### UTERUS

**Boldt: Cancer of the Uterus.** *N. Y. M. J.*, 1913, xcvi, 8.  
By Surg., Gynec. & Obst.

The author claims that the vaginal operation, particularly by the method generally used, gives a much lower primary mortality than the extensive abdominal operation; but when the disease has its origin in the cervix, even though it is still seemingly in the beginning stage, the percentage of recurrences is very large.

The vaginal operation has a field of usefulness, but the indication for it should be limited to women who are very obese, to the very early stages of epithelioma of the vaginal part of the cervix, and to cancer of the body of the uterus. Particularly should preference be given to the vaginal operation in the cases mentioned if the patient's age be past fifty years, since at that age and beyond it the disease is not so likely to have affected the glands. If the vaginal operation be done, the method practiced by Schauta of Vienna should be that of choice.

The features of importance are: An extensive paravaginal section must be made, extending about 2 to 3 cm. behind the anus. This gives an adequate approach to the field of work. The vaginal cuff, which is next made, should take in the upper third of the vagina. The bladder must be well pushed off, care being given to its lateral attachments, so that the ureters can be fully exposed to permit tying of the uterine arteries outside of them.

Since, however, the abdominal route permits a more extensive extirpation of the parametria, besides giving a better view of the field of work, and since it permits the extirpation of enlarged glands, it is obvious that the extensive abdominal operation should be the method of choice, only excluding the class of cases previously mentioned.

**Cragin: Report of a Case of Carcinoma of the Uterus in a Girl 18 Years of Age.** *Am. J. Obst.*, N. Y., 1913, lxxvii, 114.  
By Surg., Gynec. & Obst.

A patient 18 years of age, who for several months had menorrhagia, which responded to medication and general measures, was found to have a cauliflower-like tumor of the cervix, which on microscopic examination proved to be a carcinoma. A radical abdominal operation was performed, and the patient has showed no recurrence six months after the operation.

N. SPROAT HEANEY.

**Vautrin and Hoch: Chorio-Epithelioma and Hydatiform Mole** (Chorio-épithéliom et mole hydatiforme). *Bull. d. Soc. d' Obst. e. d. Gynéc. d' Nancy*, 1912, No. 8, 940  
By Journal de Chirurgie.

In this case, the expulsion of hydatiform mole was followed several months later by a discharge, to

which the patient paid no heed. When the case was seen ten months later there was emaciation, fever, rapid pulse, and a large and very soft uterus. The history led to the diagnosis of a malignant tumor of placental origin, and laparotomy was performed. The uterus was very soft, almost diffuent; it was covered with a serous exudate. The omentum was adherent to the fundus, thus covering over a neoplastic nodule which was continuous with a grayish mass that had partially herniated through the uterine wall. Another tumor nodule lay close to the pelvic colon. This was excised and a hysterectomy performed. Care was necessary on account of the friability of the uterus. The patient recovered.

When the uterus was opened a grayish tumor was found, which formed a shaggy lining of the entire wall. The uterus was distended by this tumor, which at certain points perforated the uterine musculature. Microscopic examination showed numerous necrotic foci in the tumor. The infiltrating element was composed of elongated and fusiform giant cells. The nuclei were large and in some cases multiple. Certain of the cells were of plasmodial reticulated type, with numerous nuclei. These syncytial cells formed a network about vascular lacunae which had no other walls, and infiltrated, disintegrated, and destroyed the normal tissues of the uterine wall.

This form of chorio-epithelioma should be classed among the type usually called syncytioma, since the section showed no cells resembling the cells of Langhans layer. The further history of this case was lacking. The uterine perforation and metastatic nodules made the prognosis unfavorable. Earlier diagnosis and operation might have allowed of a better prognosis.

L. CHEVRIER.

**Sadlier: Some Complications of Urine Fibroids Commanding Early Diagnosis and Immediate Operation.** *Am. J. Obst.*, N. Y., 1913, lxxvii, 87.  
By Surg., Gynec. & Obst.

Sadlier reports the following cases: (a) Rupture of blood-vessels in a fibroid. A woman 25 years of age who had been entirely well until menorrhagia appeared two years ago, was suddenly and acutely taken ill with pain, nausea, and faintness and with symptoms indicative of intra-abdominal hæmorrhage. She was treated expectantly for eight hours, after which operation was performed. An artery, still bleeding, at the summit of one of the many small fibroids of a multiple fibromyoma of the uterus was revealed. Supravaginal hysterectomy was followed by recovery. (b) Suppuration of a fibroid. A frail woman of 60 years who had not menstruated for ten years, noticed a swelling above



the pubis which, under the symptoms of chills and fever, rapidly grew to the level of the umbilicus within a period of ten days. The shape simulated markedly a pregnant uterus. A supravaginal removal of the non-adherent uterus revealed that a cavity holding 2,000 cc. of pus had formed at the side of the fibroid on the posterior wall. (c) Necrosis of a fibroid. A patient, 45 years of age, who had of late years had menorrhagia, had an amenorrhœa appear, for the relief of which, under the supposition that she was pregnant, she dosed herself. Soon afterwards she was seized with violent pain in the pelvis. This was followed by a hæmorrhage, and later, evidence of peritonitis with effusion appeared. Operation revealed a subperitoneal fibroid of the uterus, which had undergone a necrosis, due, Sadler suggests, to circulatory disturbances produced by an emmenagogue. N. SPROAT HEANEY.

**Strassmann: The X-ray Treatment of Uterine Fibroids** (Zur Verwendung der Röntgenstrahlen für die Behandlung der Myome des Uterus). *Therap. d. Gegenwart.*, 1913, liv, 24.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The object of local X-ray treatment in uterine fibroids is to cause a cessation of menstruation, to produce castration, and atrophy of the uterus. Not all cases can be successfully treated; those where the fibroid projects into the uterine cavity are better treated with the knife. Painful myomata or tumors compressing the bladder or intestine had better be operated. The technique of the treatment is as follows: 80 to 100 light minutes are applied locally for five to six treatments, followed by a rest of 3 to 4 weeks, and if no contraindication has developed, continued as before. The action on the skin should be carefully watched, as sometimes late injury is seen there. Women who are anæmic from the loss of blood should be observed carefully, for not infrequently a threatening hæmorrhage occurs after the X-ray treatment has begun. The knife cannot be dispensed with entirely in the treatment of fibroids. LOHFELDT.

**Schauta: The Modern Treatment of Myomata** (Ueber moderne Myombehandlung). *Wien. med. Wchnschr.*, 1913, lxiii, 13.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Schauta declines the conservative vaginal or abdominal enucleation of myomata, because of the danger of recurrence (14 per cent) as well as the greater operative danger and the negative results as to subsequent pregnancy. He prefers the abdominal route with the transverse fascial incision, though for small tumors the vaginal method has some advantages. Supravaginal amputation is rather to be commended than total extirpation, yet he acknowledges and emphasizes the danger of malignancy in the stump. An ovary left behind is not highly valued, since without the correlation of the uterus its activity soon ceases. With reference to the indications for radical treatment, the author

lays stress upon the importance of recent research as regards malignant (sarcomatous) degeneration of the fibroids, also pointing out the frequent combination of myoma and corpus carcinoma (10 per cent). Besides that, there is the danger of endocarditis, myocarditis, crown atrophy, and necrosis and thrombosis of the vessels. The so-called benign myoma is viewed very skeptically. Because of their slight value, abrasion and ergotin treatment are merely touched upon. In large part the article is devoted to treatment with the X-ray. Schauta regards the effect thus produced as a bloodless castration, a procedure free from danger and causing less decomposition resorption, probably because the generative function of the ovary only is destroyed, the interstitial portion, producing the inner secretion, being conserved. Contraindications to X-ray treatment conform with those of Klein. The author's own results following the method of Albers-Schönberg, are not very encouraging. Only with the gynecologist as diagnostician should the Röntgenologist be allowed to expose myomata to the rays. Schauta looks upon X-ray therapy as a welcome supplement, a help in need, and is convinced that radical extirpation is still the safest procedure for the present and for the future. FLATAU.

**Goullioud: Treatment of Uterine Malformation by Laparotomy** (Du traitement des transformations utérines justiciables de la laparotomie). *Ann. d. Gynec. et d'Obst.*, 1912, ix, 593, 691 and 726.

By Journal de Chirurgie.

After a brief discussion of the anatomy of uterine malformations, the author takes up the disturbed functions of the uterus. From a study of the latter, the general statement is made that in most all bicornuate uteri the incomplete drainage plays an important rôle in the symptoms. He divides his article into four heads:

1. *Painful rudimentary uterus without hæmorrhage.* The two symptoms are amenorrhœa and pain. The displaced uterus is full and the uterine cavity is obliterated or absent. The pains are sufficient indications for surgical treatment. A hysterectomy with drainage is done.

2. *Uterus with rudimentary cornu.* The rudimentary cornu with a cavity filled with blood gives a lateral tumor clinging to the uterus, which can easily be mistaken for a fibroma or salpingitis. The pains are ordinarily sharp. It is pedunculated and resection is done through the pedicle. If it is sessile, more conservative treatment is used, such as a myomectomy. If it is embedded in the surrounding structures it is to be extirpated along with the adnexa on that side.

3. *Double uterus.* Hysterectomy of one half is the ideal operation for this condition, removing the adnexa as in hæmatosalpinx, and when unavoidable, marsupialize. When the two uterine cavities cannot be easily separated a total hysterectomy is done by the abdominal route. In certain cases a unilateral salpingectomy is possible with the incision



of the hæmatometrix through the vagina. In cases where the general condition of the patient will not permit a hysterectomy, a bilateral salpingectomy must suffice. In rare cases, a simple vaginal operation might be considered with puncture or incision of the hæmatometrix. The suppuration of the pouch is an absolute indication for puncture.

4. *Imperforate cervix or isthmus with only one ureter.* The functional symptoms are always pain and amenorrhœa. Different types exist upon the basis of physical examination: imperforate uterine isthmus with a contracted uterus, under 3 or 4 cm.; imperforate cervical canal with cicatrization; imperforate external os with impermeable but distended cervix, since it is connected with the hæmatometrix; imperforate cervix with rudimentary development of the vagina.

In discussing the treatment of the conditions mentioned above, the author makes the following classification:

(a) Imperforate uterine isthmus. The ideal operation in this case is tracheostomy, following the well-perfected technique of the author. Make an abdominal hysterotomy, opening the fundus and cervix and resecting the bicuneiform fibrous isthmus; suture the two lateral lips, and close the uterus; abdominal drain.

(b) Imperforate cervix replaced by fibrous tissue. The operation advised here is a vaginal hysteroclystrostomy with a laparotomy to find out the exact state of the adnexa. The vaginal operation may be done in different ways: a simple puncture with a trochar or scalpel through the fibrous tissue; puncture of the hæmatoma without paying attention to the fibrous cervix, and suturing the opening of the vagina; resection of the cervix and suturing of the uterus to the vaginal muscle. The latter is the technique perfected by the author.

(c) Complete separation of uterus and vagina. Different methods of procedure have been devised. Backward displacement of the uterus and making a fistulous opening between the vagina and uterine fundus (Halbaw). After having begun the loosening of the uterus through the vagina, Hofmeier continues by the abdominal route. He opens the inferior pole of the uterus, passes ligatures through the uterus, then pulls them through the vagina. Hysterectomy is indicated at times, and must be considered when the adnexa render the more simple procedures impossible.

Pathology of double uteri aside from the hæmatometrix. We can find, with normal or hæmorrhagic uteri, salpingitis, benign or malignant tumors, and painful retroversions. These lesions should be treated in the customary manner, remembering that we are dealing with two cavities, and that each should be treated individually and with the least possible mutilation.

*Operative technique.* With reference to the technique, we must remember that on each side there is but one uterine artery and that the broad ligament is absent. There is one ligament more or less thick-

ened, the vesico-rectal, which is often walled off and must be loosened with care. The existence of this band is a strong argument in favor of the abdominal route for all radical operations. There often exist malformations of the urinary organs such as rudimentary ureters and kidneys, and these are at times abnormally situated. More important is the fact that the ureters can be more carefully watched.

The general conclusion of the author is that we must apply the best methods for each individual case, being guided by the lesions present; remembering all the while that conservatism is better than too radical procedures in many cases.

L. CHEVRIER.

**Barrows: The Surgical Treatment of Prolapse of the Uterus.** *N. Y. St. J. M.*, 1913, xiii, 32.

By Surg., Gynec. & Obst.

The treatment of uterine prolapse, advocated by the author, is based upon the interpretation of the condition as a hernia of the uterus, with its attached bladder and rectum, due to a relaxation of the upper pelvic floor. Mindful of the importance of preserving the vascular and nervous supply of the upper pelvic floor so as to prevent further relaxation of the structures, as emphasized by Professor Polk, the author adopted a combined surgical procedure which has given satisfaction in the majority of the cases. Cures are reported on the hospital records of a large number of patients, and five cases from his private practice illustrating the range of indications of the method are also quoted in support of the author's argument.

The operation consists of the following stages, all to be done at one sitting: (1) Amputation of the cervix uteri; (2) anterior colporrhaphy; (3) repair of the torn or relaxed perineum by the flap-splitting method, with approximation of the separated perineal muscles and fascia, together with shortening of the round ligaments by Alexander's method. This mode of shortening the round ligaments is regarded by the author as the most important part of the procedure. The direction of the uterine axis is improved and the cervix is made to impinge upon the posterior vaginal wall above the restored perineal body instead of following the axis of the vaginal canal.

The method is especially suitable for the relief of uterine prolapse in fleshy patients whose abdominal walls it is desirable not to injure, and in cases of comparatively rapid prolapse in young women as a sequel to extensive laceration of the perineum. A permanent cure is to be expected in properly selected cases, after a short period of rest in bed (usually two weeks), with no danger to life and very little subjective discomfort.

In cases in which no objection to opening the peritoneal cavity obtains, Polk's operation for tightening up the upper pelvic floor promises the best results. This consists in plicating the vaginal wall at its junction with the uterus by bringing it



together from side to side in front of the cervix, the bladder having been previously separated and pushed forward. Three kangaroo tendon sutures are sufficient for this. The uterosacral and round ligaments are then shortened.

The efficiency of the procedure is illustrated by the results obtained in 16 patients of Polk and 3 personal operations of the author, in all of whom the prolapse was apparently cured absolutely, without complication of any kind or discomfort to the patient. Two of the last mentioned cases, of more than two years' standing, are well and free from any disturbance at the time of the report.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**Jones: Etiology, Pathology, and Treatment of Ovarian Cysts in Relation to Child-Bearing, with Special Reference to Hæmorrhage into the Cysts.** *Surg., Gynec. & Obst.*, 1912, xvi, 63.

By Surg., Gynec. & Obst.

In the case reported, a marked enlargement of the abdomen appeared within a few minutes after a normal labor following a normal pregnancy. Rapid increase in size continued until the fifth week, when the writer was called in consultation. A diagnosis of probable ovarian cyst was made and a laparotomy was performed by him. The growth proved to be a multilocular cyst of the left ovary, which was very adherent to the abdominal wall, bladder, omentum, and intestines. It was composed of one large cavity holding about  $5\frac{1}{2}$  litres and four other relatively very small loculi. The contents consisted of chocolate-colored (hæmorrhagic) fluid and there was abundant hæmorrhagic infiltration of the cyst walls. The sudden enlargement following delivery probably was due, in large measure at least, to hæmorrhage into the cyst, which was caused by lessened intracystic tension following the sudden increase of intrapelvic space, due, in turn, to the sudden emptying of the uterus.

A consideration of this case, together with a review of the literature upon this subject, leads to the following conclusions:

1. *Etiology and pathology.* Ovarian cysts almost always produce serious trouble sooner or later, and especially during pregnancy, labor, and the puerperium. The most dangerous period is the puerperium. Torsion of the pedicle is the most common accident, with its resultant hæmorrhage, gangrene, and infection. The most frequent result of twisted pedicle is hæmorrhage, which occurs in about 50 per cent of all cases of torsion.

2. *Treatment.* The tendency of ovarian tumors is almost always to increase in size more or less, and also sooner or later to undergo torsion, hæmorrhage, gangrene, infection, or malignant degeneration. Hence, in general, these cysts should be removed as soon as possible after they are discovered. One should usually be particularly careful not to let a woman pass into the puerperium without first ridding her of the cyst.

Most clinicians maintain that an ovarian tumor in most cases should be removed as soon as it is found. Exception may be made to this rule in case the tumor is not discovered till after the fifth or the sixth month of pregnancy. One then frequently is justified in waiting till the child is viable.

As to the choice of treatment, there usually is no room for doubt. So-called expectant treatment in most cases amounts to practically no treatment at all. Aspiration has a very high mortality. Obstetrical operations have an enormous mortality, unless the obstructing tumor is removed before they are undertaken. Ovariectomy (usually abdominal) has a mortality far less than any other procedure (less than 5 per cent of all cases). Cæsarean section, if undertaken early, is an excellent procedure in certain cases. The author concludes with the words of McKerron, which are more pertinent today than they were nearly ten years ago, when he wrote them: "All the available evidence points to the advisability of early operation" (ovariotomy).

**Seedorff: Hæmatoma of the Ovary; Its Origin and Clinical Significance** (*Hæmatoma ovarii*; dets Fremkomst og kliniske Betydning). *Hosp.-Tid.* 1913, lvi, 73.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author, as Hendley and Savage have done before, tried to differentiate a group of ovarian cysts from hæmorrhagic ovarian cysts which consist of larger cysts with a bloody content and are characterized by a special formation and a special etiology. The size of the cysts examined varies from a walnut to an orange but may be considerably larger. The inner surface is not smooth but is covered with a network of strands which here and there appear as trabeculæ. Between these lies the content of the cysts, which is usually a bloody mucoid mass. Inoculation with this substance always gives a negative result. The ovarian tissue may be entirely atrophic. In 2 cases out of 7 which the author examined more carefully he found numbers of lutein cells, and in the remaining 5 there were cells which looked like those seen in older corpora lutea. Based on these findings, Seedorff's conclusion is that these tumors form a separate group, and he thinks they are old corpus luteum hæmatoma. The folds of the wall lead one to think of the well-known folds of the corpus luteum. In hæmorrhage into the cavity these can be gradually wiped out. They occur bilaterally, and their course is chronic. The symptoms are little characteristic, and the diagnosis can therefore be made only with more or less probability. In none of the cases referred to was a diagnosis positively made. The treatment is like that of salpingitis. Since the condition cannot always be treated conservatively, there will be a number of cases in which operation is necessary; and furthermore, since younger persons are often affected, one should be as conservative as possible during the operation. Histories of 25 cases are added.

S. A. GAMMELTOFT.



**Meyer and Ruge II: Relationship of the Time of Corpus Luteum Formation and Menstruation** (Ueber Corpus luteum-Bildung und Menstruation in ihrer zeitlichen Zusammengehörigkeit). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 50.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Basing their conclusions on a study of 82 cases, the authors determined a relationship between the time of ovulation and menstruation. In the 28-day cycle of menstruation the ripening of the follicle probably comes after menstruation, on about the eighth day from its beginning, if not during the time of menstruation itself. The beginning of lutein formation is the second week; then the hæmorrhage follows in the second half of the third and in the fourth week. The height of the hæmorrhage is immediately preceding menstruation. During the latter, regression begins and lasts about 14 days. The normal sequence is then as follows: first, the hyperæmic stage of the corpus luteum during the interval; the stage of vascularization of the corpus luteum at the beginning of the premenstrual phase; hæmorrhage of the corpus luteum in the advanced premenstrual phase; the high point of hæmorrhage of the mucosa and of the corpus luteum shortly before menstruation; and the regression during and after the same. During pregnancy the corpus luteum remains at the high point of its hæmorrhagic state.

P. SCHAEFER.

#### VAGINA

**Stratz: Three Cases of Vaginal Tumors** (Drei Fälle von Vaginaltumoren). *Gynäk. Rundschau*, 1913, vii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports three interesting tumors of the vagina. One case is that of a walnut-sized fibroma, above which the uterus lay in retroflexion. The dislocation of the uterus disappeared after removal of the tumor. The second case consists in a cyst behind the urethral orifice lined with one layer of epithelium and containing cholesterol, dysuria being the symptom complained of. Uterus duplex was found above, and in view of this anomaly the origin of the cyst is probably an embryonic epithelial inclusion in the development of the urogenital sinus. The symptoms disappeared after the removal of the cyst. The third and last case was that of a woman who had been operated upon several times for urinary incontinence, and where dystopia of the urethra and a paraffin mass resulting from an earlier operation were found. After removal of the tumor and plastic repair of the urethral orifice this patient was dismissed entirely cured.

BENTHIN.

**Römer: A Case of Hæmatoma of the Vagina and Vulva, with Subsequent Death from Hæmorrhage** (Ein Fall von Hæmatoma vaginæ et vulvæ, mit nachfolgendem Verblutungstod). *Zentralbl. f. Gynäk.*, 1913, xxxviii, 131.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Following a spontaneous delivery in a 23-year-old bipara, a hæmatoma developed in the vulva and

vagina the size of a child's head, which separated the entire posterior wall of the vagina from the rectum as high up as the uterus. During the transportation of the patient to the clinic the blood tumor broke and an enormous hæmorrhage took place, approximately two liters. A few hours after admission the patient died in collapse. The author regards the rupture of the larger vessels in the paravaginal connective tissue, produced by the pressure of the head on the promontory, as the cause of the hæmatoma.

JAEGER.

**Rubin and Leopold: The Cause of the Persistence of Gonorrhœal Vulvovaginitis in Children.** *Am. J. Dis. Child.*, 1913, v, 58.

By Surg., Gynec. & Obst.

After remarking on the chronicity of this infection, the authors report their examinations. For the purpose of determining the location of the affection, a female urethroscope was used. By this means they were able to determine that the vagina was affected in practically all cases, and also that the cervix of the uterus was involved in the same way. Accompanying the article is a very exact description of the cervix uteri as found in infants and young children. Being satisfied that none of the treatments heretofore employed were adequate, the authors tried, by injection through the urethroscope, an antigonococcus serum, without any results whatever.

In the treatment they make the following suggestions: 1. It is important to determine the extent of the deep lesion before any active treatment is begun. For this purpose the electric-lighted female urethroscope should be employed. 2. By means of the same instrument appropriate medication can be carried out. 3. When irrigations are resorted to, the douche tip or catheter should enter the vagina at least 1½ inches. 4. Applications by means of swabs used alone are useless and injurious. 5. When strong silver solutions are applied to the cervix and vagina, it is well to keep the patient in bed for a few days.

The authors draw the following conclusions:

1. The invasion is more violent and more extensive owing to (a) the close proximity of the portals of entry; (b) the tender mucosa and epidermis.

2. Once started, the infection practically develops as in a closed tube. This is not due to the valve-like closure made by the hymen, but to the construction of the perineum and the external genitals. Each segment of the vagina, from the most superficial to the deepest part, serves as a valve to dam back the discharge. This is due to the fact that the vaginal walls are in close contact and do not permit of natural and easy drainage.

3. Crypts and adhesions in which bacteria lodge form in the vaginal mucosa.

4. The vaginal portion of the cervix shows the deepest changes, and is at the same time in the most disadvantageous position for drainage and treatment.

C. G. GRULEE.



**Penkert: Recurrent Menstrual Diphtheria of the Vulva** (Rezidivierende menstruelle Vulvadiphtherie). *Med. Klin.*, 1913, ix, 100.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Stratz reports a case of genuine diphtheria of the vulva in a woman 43 years of age, secondary to a cold of more than 3 years' standing. Each month, shortly before and during menstruation, the symptoms tended to flare up, both the throat and the vulva becoming membranous. The patient was variously treated for gonorrhoea and lues. On both sides of the vulva yellowish gray membranes were found, closely adherent to the surface and bleeding slightly when loosened. The bacteriologic examination showed diphtheria bacilli. Upon injection with Merck's antitoxin the bacilli could no longer be recovered and the membranes in the throat disappeared. The vulvar membranes, however, were only removed by local treatment with pyocyanasis.

BENTHIN.

**Ehrl: Therapy of Gonorrhoea** (Zur Therapie der Gonorrhoe). *Wien. med. Wchnschr.*, 1913, lxiii, 274.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

By bacteriologic proof only can urethritis be looked upon as gonorrhoeal. In every case the treatment should be individual. Ehrl emphasizes the importance of internal therapy with disinfectants, thus supporting the natural prophylactic forces. Such a remedy he has found in arhovin, which produces no secondary effects even when used for some time. All subjective disturbances disappear promptly, as do the objective often after a few days.

WEICHEL.

#### MISCELLANEOUS

**Stefko: The Action of Adrenalin on the Ovaries and Uterus of Some Mammalia** (Adrenalin und seine Entwirkung auf die Ovarien und den Uterus einiger Mammalia). *Fortschr. d. Med.*, 1913, xxxi, 67.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a summary of the literature on the relation of the adrenal and sexual glands. Emesis gravidarum is cured by adrenalin. Stefko fed .2 to .6 cc. of a 1:1000 solution of adrenalin hydrochloride to rabbits and examined the animals on the eighth day. There was a loss of 30 to 50 gm in weight, the uterine horns were blue, and examination of the ovaries microscopically revealed an absence of chromatin in the germinal vesicles. The urine contained albumin and the adrenalin reaction was positive. The author concludes that internal secretions from the ductless glands plays a rôle in sex determination.

HAPPICH.

**Gemmell and Paterson: Duplication of Bladder, Uterus, Vagina and Vulva, with Successive Full Time Pregnancy and Labor in Each Uterus.** *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiii, 25.  
By Surg., Gynec. & Obst.

The patient, in whom this anomaly was discovered, was a woman of medium height and well nourished.

Her general configuration was normal except that the umbilicus was absent and the pelvis was enormously wide. The distance between the anterior superior spines was eleven inches. There was no symphysis pubis nor mons veneris, the distance between the two pubic bones being  $5\frac{3}{4}$  inches. Two separate vaginæ and two uteri were demonstrable. Between the thighs a perineal space of 4 inches was formed. The curve of the sacrum and coccyx and their relation to the spine of the ischium on the left side rendered the left half of the pelvis almost normal. Behind the left vulva was a single anus. The vulvæ were normal in size and form. Labia majora were present, with labia minora, clitoris, vestibule and the opening of a urethra for each vagina. A well formed cervix and corpus was palpable bimanually through each vagina. These were freely movable and independent of one another. A single ovary could be felt at the outer side of each uterus. The urethræ were apparently normal. Urine may be withdrawn by catheter through either. After injecting collargol through each, two separate and distinct bladders were demonstrated on the X-ray screen.

An area anterior to and between the two vulvæ was devoid of hair or sweat glands. Through this a hole was palpated. The authors suggest that this represents the umbilical area and propose by way of explanation that there has been no allantois or umbilical cord; that the foetal belly-wall was in contact with the placenta and that at birth the orifice was ligatured.

Obstetrically, the patient was first seen in April, 1910, in labor, the foetal head presenting at the right vulva. The only mechanism present was that of descent, so that the posterior vaginal wall was pushed against the gluteo-perineal tissue, stretching and thinning out the structures forming the right perineum, a false one as opposed to the real one on the left side. An incision was made through the right lip of the vulva, downwards and to the right, to a distance of three inches, and the child was easily extracted. A second labor two years later terminated spontaneously. In this instance the child occupied the left uterus and was born through the left vulva, the more perfect bony framework of the pelvis on this side compelling a normal mechanism of labor.

CAREY CULBERTSON.

**Bossi: Psychopathy in Diseases of the Ovaries and Uterus** (Eierstocks-Uterus-krankheiten und Psychopathien). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 136.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Bossi again strongly advocates his theory, that many psychopathies take their origin in gynecological diseases and that they disappear finally when the affliction is cured. Most frequent are mental disorders in chronic endometritis with stasis of pus in the uterine cavity. The diagnosis of the mental disease is unimportant, the conspicuous symptoms only being of value, such as melancholia, over-



irritability, paroxysms of rage, inclination to suicide, etc. The same gynecological disease may cause the most varying psychopathic symptoms, according to the individual constitution. The danger of a mental disease is especially great in neuropathic women and here by way of prophylaxis the closest attention must be given to the cure of the endometritis and cervical catarrh. When the psychic affliction is first established the gynecologic treatment is very difficult, and such patients should be cared for in the clinic before they are sent to an insane asylum. Likewise, in neuropathic men the closest attention should be given to the cure of any somatic trouble in order to prevent mental disorders.

Bossi energetically repudiates the accusation of exaggerating, and to demonstrate the correctness of his theory he enumerates many quite conspicuous cases which have been published, and cites two cases in detail. One of these women had been placed in an insane hospital for dementia præcox and became completely normal after the cure of the gynecologic disorder — cervicitis, endometritis, and retrodeviation of the uterus. The other patient had the same pelvic condition and was cured of her mental disorder and chora by a gynecologic operation, thus being saved from the asylum. Both women returned to their families, became pregnant, and gave birth to healthy children, and are now, 14 months after their trouble, physically and mentally well.

In the discussion Genta approves of Bossi's theory, and reports two cases of mental disorders based upon ear diseases which disappeared after the cure of the latter. Maragliano and Varaldo report cases in which psychic diseases disappeared after the cure of prostatitis and after extirpation of an ovarian sarcoma. Oliva, Pastine and Bassoni advocate the recognition of certain clinically well defined psychiatric diseases on a definite anatomical basis. Oliva advises consultation with a gynecologist in mental diseases, provided the patient be handed over again to the psychiatrist after the pelvic trouble has been removed.

RUHEMANN.

**Cohn: The Relation Between Breast and Ovary, with Respect to the Internal Secretion** (Die innersekretorischen Beziehungen zwischen Mamma und Ovarium). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 93.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The relation between the mammary gland (the nipple excluded) and the genitalia finds explanation in the influence of a hormone, according to the results of transplantation experiments. The source of the hormone was looked for in the ovary, but as to its existence there is great uncertainty. The relations became clearer when the influence of the ovary upon the development of the breast is kept separate from that exerted upon its function. Ovarian influence upon mammary development exists, without doubt. As yet there has been no definite research, during the embryonal period, as to whether elementary influences, if indeed they originate in the mother at all, come from the maternal ovaries or not.

Observations on children whose mothers have both ovaries extirpated during pregnancy would be of importance, but these are thus far missing, as are results from animal experimentation. The direct influence of the ovary is apparent from castration experiments during puberty.

Against the possible theory that this influence takes its course indirectly over the atrophied uterus, Cohn cites a case in which ovaries and mammae were well developed in spite of a congenital defect of the uterus. The mammary gland remains small only when the genital atrophy involves the ovaries. In such a case Cramer has effected menstruation and a better development of the breast by implanting the ovary from an osteomalacic woman. That the ovarian influence causes the swelling of the mammary gland during menstruation is very likely, proof of which, however, is yet wanting. But the function of the breast during pregnancy seems quite different. At the beginning of pregnancy the corpus luteum may be thought of as an interstitial gland, but the change after delivery is not explained by this. Placenta and ovum have been considered, but placental extract and the pulp of the embryo offer no specific action. A probable explanation is that the mammary gland, which during pregnancy is influenced to increased growth in a specific manner, is influenced to an increased production during the puerperium by a non-specific lymphagogue activity. Certain other observations speak for an antagonism between the ovarian and the mammary function, such as milk secretion after castration, changes in the climacteric in bilateral ovarian tumors and in purulent breaking-down of the ovaries. The author gives the history of a case of atrophy of the ovaries and amenorrhœa with simultaneous adiposity (Dystrophia adiposogenitalis) and pronounced milk secretion. The necessary lymphagogue or leucostimulants depend upon the ovaries in so far as they become effective only after ovarian activity has ceased. From indefinite experimental results it would appear that the breast, on the other hand, may influence the function of the ovaries by hormones, but this has not been established with certainty. In one case of amputation of both hypertrophied mammae during pregnancy the menstruation became very irregular and weak for 15 months, but subsequently again became normal.

KERMAUNER.

**Prochownick: Acute Tuberculosis Following Gynecological Procedures** (Akute Tuberkulose nach gynäkologischen Eingriffen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 7.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Prochownick has examined critically 7 cases where tuberculosis followed gynecological procedures and resulted in death. These were often simple operations, such as dilation with laminaria tents, reposition of the retroflexed uterus, attempts at reposition with the sound, curettement following criminal abortion, and extirpation of gonorrhœic or



tuberculous adnexa. In five women there was no evidence of latent tuberculosis in the body or genitalia, although the husbands of two were suspected of being tuberculous. The immediate improvement was remarkable. The beginning of the fatal tuberculosis was relatively late, thus giving late findings in the lungs and pleura. Expectoration and demonstration of the bacilli were entirely wanting. In one case a caseous pneumonia, following an uneventful operation, arose from a focus in the apex of the lung and had given no symptoms. In another case he observed fatal tuberculosis following an extirpation of a tuberculous kidney with an extension into the connective tissue. The author emphasizes the importance of clinical examination. A diagnosis can often be made by summing up all the findings, history, temperature, examination of the blood, the firm flat extension of tuberculous areas, Hegar's rosary, tuberculin reaction, cysto- and rectoscopy and curettement which, however, is very dangerous, giving a positive result in only about one third of his cases. Tuberculosis must be suspected in every protracted cases of disease of the adnexa which does not yield to treatment. The theories of Krönig that a genital tuberculosis seldom leads to a miliary tuberculosis if local treatment is not employed, and that it almost never causes the death of a patient, must be modified. Whenever tuberculosis is present in the genital tract, a circumspect prognosis should be made. The author cannot agree with this ultraconservative view of Krönig. In tuberculosis localized in the genitalia a cure or improvement lasting through a number of years can be attained by excision of the focus.

BENTHIN.

**Reynolds: The Theory and Practice of the Treatment of Sterility in Women.** *J. Am. M. Ass.*, 1913, lx, 93. By Surg., Gynec. & Obst.

Reynolds discusses intimately the causes of sterility in women with respect to the less pathologic conditions or lesions. Abnormal vaginal or cervical secretions and their influence are considered at length, as is the somewhat new idea that minor enlargement of the ovaries, long regarded as unimportant in all respects, are in reality of great importance in their relation to sterility.

Hostility of cervical uterine secretions may be due either to their altered chemical composition or the mechanical obstruction produced by increased viscosity. Persistent congestion of the upper genital tract has long been known as a bar to fertility. This can be explained by the existence of an overabundant secretion flowing continuously from the os. This congestion may be due to many pathologic lesions, but is also the product of overfrequency or abnormalities in the sexual act or appetite.

An over scanty cervical flow with consequent inspissation is an equally efficient mechanical obstruction to the progress of the spermatozoön. Probably this inspissation is the result of some degree of infection of a secretion which is arrested

behind a mechanical obstruction. Mechanical obstruction in married women is followed, in most instances by some degree of ascending infection.

He next considers obstacles to the conjugation of the spermatozoön with the ovum, which are furnished by abnormal conditions of the tubes and ovaries.

The existence of an absolutely normal uterine secretion disproves the existence of salpingitis. The coincidence of persistently abnormal uterine secretions and tubal tenderness always warrants a presumption of mild tubal inflammation. These mild inflammations are never found in coexistence with an entirely normal ovary, but are always accompanied by such alteration of the ovary as is usually palpable.

Prognosis of the several classes of sterility:

1. Poor. (a) For persistent infantile uterus, or for degrees of underdevelopment which approach it, there is no treatment.

(b) After resections of portions of thoroughly diseased tubes the chance of pregnancy is uniformly discouraged.

2. Remediable. (a) Sterility due to congestion caused by unsatisfactory sexual relations.

(b) Sterility due to alterations in the vaginal secretions is not very common and is usually easily remedied.

(c) Sterility due to abnormal cervical secretion usually implies the existence of an altered vaginal secretion as well. When the pathology is situated only in the cervical canal, it is usually a mere inspissation in a dilated canal behind a pinhole os. Its treatment is free drainage with or without curettage.

(d) Sterility due to altered cervical, uterine and tubal mucosæ and those complicated by semicystic ovaries are difficult of separate classification. In the treatment of sterility, success is not to be expected in any large proportion of cases unless all deranged conditions are restored to normal. If the enlargement of the ovaries is permitted to persist, a return of the mucous membrane to normal is attended by only a small percentage of pregnancies. Many conditions capable of producing sterility are insufficient to produce the other symptoms which are associated with abnormalities of the pelvic organs.

LEO DWAN.

**Köhler: Technique and Results Obtained with Röntgen Ray Treatment in Gynecology** (Zur Technik und Erfolge der gynäkologischen Röntgentherapie). *Fortschr. a. d. Geb. d. Röntgen.*, 1913, xix, 408.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Köhler reports his experience and results obtained in the treatment of myomata, giving details of technique. Twenty-six cases of myoma were treated. Fifty per cent of the cases resulted in complete cessation of hæmorrhages, while in the other fifty per cent oligomenorrhœa was obtained; a diminution of the myomata could be demonstrated in thirty per cent of the cases. Köhler is a decided opponent



of the radical method of treatment, by which permanent results are expected after a few prolonged exposures. To explain his position, he directs attention to experiments on animals which prove that the mucous membrane of the stomach, for instance, is markedly and permanently altered by intense X-ray illumination. Injuries will result even from smaller doses, but in this instance are not irreparable, as the epithelium will recover its normal condition during the intervals between treatments; the ovarian follicles, however, being very highly sensitive, will be permanently injured even by smaller doses.

THIEMANN.

**Fränkel: Röntgen Rays in Gynecology** (Die Röntgenstrahlen in der Gynäkologie). *Fortschr. a. d. Geb. d. Röntgen.*, 1913, xix, 412.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In reply to an inquiry concerning the treatment of female diseases by means of Röntgen rays, Fränkel earnestly warns against the employment of enormously high doses, because they lead to vesical and intestinal disturbances and adhesions in the pelvis. These accidents will be avoided by giving small repeated doses, as the intervals between treatments permit recovery of the tissue, which in this respect differ from the very sensitive ovarian follicles. In two thirds of his cases (about 280 cases of myoma) Fränkel obtained good results by his method. He has also successfully extended treatment with Röntgen rays to all the other forms of gynecological hæmorrhage. He has, moreover, employed the method for the permanent or temporary prevention of pregnancy in psychopathic or luetic subjects or in those affected with diseases of the lungs, the kidneys, or the heart. In this direction he finds promise of good results for the future. In four instances he has also successfully employed X-ray treatment for tuberculosis of the peritoneum associated with adhesions, though complete cures could not be obtained. The apparatus required and the manner of its operation are described in detail.

THIEMANN.

**Oastler: The Occurrence of Hernia in the Abdominal Wall after the Gilliam Operation for Retrodisplacement.** *Am. J. Obst.*, N. Y., 1913, lxvii, 145.

By Surg., Gynec. & Obst.

Oastler reports the occurrence of hernia in two cases at the site of the attachment of the round ligaments to the abdominal wall after the Gilliam operation, which necessitated a repairing operation within the original operation. N. SPROAT HEANEY.

**Chapple: The Treatment of Pelvic Inflammation by Autoinoculation.** *Lancet*, Lond., 1913, clxxiv, 165.

By Surg., Gynec. & Obst.

The author makes a preliminary report on a method of producing autoinoculation. It is generally accepted that an increased blood supply to an affected area causes a liberation of an increased quantity of toxins into the general circulation, thus

producing an autoinoculation with the products of the offending organisms. He therefore suggests raising the local temperature of the pelvis sufficiently for a definite length of time to thus secure an increased blood supply to the pelvic organs. The best results will be obtained by regulating the dose both as regards quantity and time of introduction, the aim being to give the second dose when the negative phase produced by the first is over and the positive phase has been definitely entered upon. The desired pelvic congestion is easily produced by the heat emanating from several powerful electric lamps, suspended from a suitable cradle, which surrounds the patient's pelvis. A Fergusson speculum is introduced into the vagina, with its upper end in the posterior fornix and consequently lying almost in contact with the inflammatory area, and its outer end in direct communication with the bath. A typical case from his series of readings showed that the bath temperature was 180°, the temperature of air in the vaginal speculum 135°, and a thermometer placed in contact with the posterior fornix read 101.5°, whereas the mouth temperature was 98.8°. The opsonic index was followed in his cases so far as was possible.

C. H. DAVIS.

**Dührssen: Synthetic Hydrastinin Hydrochloricum** (Ueber synthetisches Hydrastinin hydrochloricum). *Berl. klin. Wchnschr.*, 1913, l, 64.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Dührssen uses hydrastinin hydrochloricum, synthetically produced by Bayer, with good results, especially in hæmorrhages due to diseases of the adnexa. The preparation has the same therapeutic qualities of the fl. ext. hydr. canad. It is employed in tablets of 0.025 gr., one tablet four times daily, or as a liquor, 20 drops three times a day. It is considerably cheaper than other preparations.

WAGNER.

**Offergeld: Synthetic Hydrastinin and Its Use** (Ueber synthetische Hydrastinin und seine Anwendung). *Berl. klin. Wchnschr.*, 1913, l, 62.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hydrastinum hydrochloricum (Bayer) is made synthetically from piperonal (methylenester of protocatechualdehyde). The advantages of the synthetic product over fl. ext. hydrastis canadensis or hydrastinin is that it exerts a much stronger action on the musculature of the uterus, a strong vasoconstrictor effect on the peripheral vessels, and there are no cramps after large doses. The synthetic product is not a heart poison and there is no bad taste, as is present in the natural drug. The quality of the artificial product is always the same and the price is lower.

Offergeld uses Bayer's liq. hydr. hydrochlor. in cases of dysmenorrhœa with good results. He gives 30 minims every two hours 10 days before menstruation. In menorrhagia, interstitial myomata, etc., he used it symptomatically. He had good results in climacteric and preclimacteric hæmor-



rhages, in stagnation hæmorrhage of a retroflexed uterus, in anæmic hæmorrhage, in hæmorrhagic diathesis, tuberculosis, nephritis, and virginal uterus.

G. A. WAGNER.

**Schröder: A Case of Atresia Hymenalis with a Large Epitheliocolpus at the Menarche** (Ein Fall von Atresia hymenalis mit grossem glykosehaltigem Epitheliokolpos in der Menarche). *Frauenarzt*, 1913, xxviii, 2.

By Zentrabl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The case concerns a girl 15 years of age who had not yet menstruated and had to be catheterized frequently for retention of urine; the outer genitalia were well developed, the hymen was closed from all sides by a membrane with a median raphe which was cyanotic and firm. An examination after emptying of the bladder revealed a rounded tumor which reached to the umbilicus and filled the entire small pelvis. Uterus and adnexa could not be recognized. Upon incising the hymen, about two liters of pus-like, thick, creamy fluid emptied from the enormously dilated vagina, a procedure which left the patient quite cured. Examination of the evacuated fluid showed vaginal epithelium, traces of blood, very little mucosa, and 2.6 per cent dextrose. The histologic study of the hymen showed multiple layers of pavement epithelium, slight round cell infiltration and plasma cells with muscular fibers at the periphery and elastic tissue nearer the center. The epithelial cells contained glycogen. The author thinks that the atresia of the hymen was of inflammatory origin, and emphasizes the importance of finding flat epithelial cells in the fluid. In the newborn this has been frequently found in cases of atresia; in the menarche, however, similar fluid has been found only twice. The presence of dextrose may be explained by the theory that from the glycogen, normally present in vaginal epithelium, grape sugar is produced by a ferment that is freed after desquamation by the autolytic destruction of the cells, and which the author was able to demonstrate.

RITTERSHAUS.

**Rövsing: Gastrocoloptosis.** *Ann. Surg., Phila.*, 1913, lvii, 1.

By Surg., Gynec. & Obst.

The author has observed that enteroptosis is rare in men, and so very frequent in women it must almost be considered a feminine disease par excellence; also that, while there is no lack of thin, badly built, neurasthenic men, it is very seldom that they suffer from the train of symptoms now recognized as due to abdominal ptosis in women. Hence Rövsing is surprised that Stiller's hypothesis on the etiology of visceroptosis is so unreservedly accepted by the majority of physicians the world

over. He has come, therefore, to regard Stiller's theory as at fault in the main, and to believe that the overwhelming frequency of ptosis in women is due to two circumstances peculiar to them: (1) their misuse of corsets and lacings, and (2) the changes which pregnancy and childbirth involve in the intra-abdominal pressure. The one causes an active subsidence of the subdiaphragmatic organs and stretches and lengthens the suspensory ligaments; while the other removes that support which the intestines, when compressed by a vigorous abdominal wall, offer the subdiaphragmatic organs. While agreeing with Wolkow and Delitzin in their well-known theory regarding support of the abdominal organs, it is evident that the abdominal wall, after many childbirths, becomes like a sort of slack bag, into which the small intestines subside; then the stomach, liver, and kidneys not only lose their support but are dropped, sucked and drawn downward. Their power of resistance against this depends entirely on the firmness and solidity of the ligaments and peritoneal duplicatures by which they are attached to the diaphragm. If these are feeble, thin, and atrophied, as with Stiller's degenerated type of mankind, or lengthened by the use of corsets and lacing, and the organs forced down, the ptosis proceeds rapidly.

Rövsing goes yet further and claims that the constipation, cardialgia, emaciation, emesis, and nervous symptoms are not due to "degenerative asthenia," but explains them as "pains released and caused by the ptosis itself." As regards the pathogeny and symptomatology he distinguishes two forms, the virginal and the maternal ptosis.

In his discussion of treatment the author finds the abdominal binder of considerable support only in the moderate ptosis of the maternal variety, and of least value in the virginal type. Of the two operative procedures extant he favors direct gastropexy. Beyea's operation, shortening of the omentum minus, he finds often technically impossible. Other indirect methods of raising the stomach (Coffey's) give good results only for a relatively short time.

Out of 256 patients 80 were treated; and where the cases have been traced the following results are presented: Complete cure 162, or 63.2 per cent; great improvement, 33, or 12.8 per cent; improvement, 18, or 7 per cent; slight or no change, 32, or 12.8 per cent; deaths, 11, or 4.6 per cent.

Where the gastrocolic ligament is considerably elongated, the omentum and the mesocolon are both shortened. With attendant hepatoptosis, hepatopexy should always be performed simultaneously.

CAREY CULBERTSON.



## OBSTETRICS

### PREGNANCY AND ITS COMPLICATIONS

**Planchu: Extrauterine Pregnancy with Living Fœtus** (Grossesse extra-utérine avec fœtus vivant). *Bull. d. l. Soc. d' Obst. e. d. Gynéc. d' Lyon*, 1912, No. 8, 904.  
By Journal de Chirurgie.

In this case a right tubal pregnancy followed an 8 year period of sterility. In the second month there was a threatened tubal abortion, with extrusion of a portion of the sac into the peritoneal cavity; and in the third month a more extensive rupture led to intraperitoneal hæmorrhage. This rupture involved the tubal sac, but the membrane with its foetal content continued to develop, half in the tube and half in the peritoneum, up to the date of laparotomy. The foetus, though living, had been so markedly compressed in the tubal sac that it presented very marked deformities which would have rendered it unfitted for life. The diagnosis of the living foetus had not been made because auscultation had not been employed. The operator performed a complete extirpation of the sac in place of marsupialization. The operation was marked by a serious hæmorrhage, but the patient recovered.

L. CHEVRIER.

**Döderlein and Herzog: Pregnancy in an Adenomyoma Uteri—A New Type of Ectopic Gestation.** *Surg., Gynec. & Obst.*, 1913, xvi, 14.

By Surg., Gynec. & Obst.

After taking up briefly the theories regarding the implantation of the fertilized human ovum and then a short consideration of the structure of the adenomyoma, the authors detail the features of this interesting case. The patient was 37 years old and had had four easy labors at term. One year ago she miscarried in the second month of pregnancy, was not curetted, and bled for one week. After this she never felt well, and complained of left inguinal pain and backache. Menstruation was normal for 7 months, but very profuse the eighth. Following this she became pregnant and missed three periods. In the fourth month pains and bleeding began and continued for eight weeks. At this time examination revealed a tumor mass, irregular in outline and firm, extending to the umbilicus. Vaginally the uterus appeared to be three times its normal size and crowded to the right by the tumor. The cervix gaped open so that the uterine cavity was palpable. Exploration with sound revealed an enormous depth beyond the fundus. There was a foul discharge and temperature of 101° F. Operation was undertaken two days later. The mass was the size of a five months' pregnancy, a growth in the left parametrium, of fairly hard consistency, with the enlarged uterus be-

low and to the right. This was removed by supravaginal hysterectomy.

The uterine cavity proved to be empty. Above the internal os an oval orifice admitting two fingers led to the left into the tumor, where a large cavity was found. A placenta fairly well preserved almost filled this cavity, with a few pus foci here and there. Microscopic sections were made from the wall of the tumor and of the uterus. Typical villi and fairly well preserved decidua were demonstrable, with considerable leucocytic infiltration. No bacteria were recovered. Large and small gland spaces lined with cuboidal epithelium were found beneath the decidua-like layers. The muscular tissue is composed of hypertrophied cells and fibers, irregularly arranged in bundles and showing a marked œdema. The uterine mucosa shows a moderate hypertrophy, with complicated gland spaces resembling decidua spongiosa. The interstitial connective tissue resembles decidua. The uterine muscularis is in the same degree of hypertrophy as that of the tumor. Inflammatory infiltration is also present here.

"From the macroscopic and microscopic examination of the specimen, it appears that there was present an adenomyoma in the left tubal angle or below it. This tumor, of course, contained glandular spaces, which were probably derived, not from any embryonic inclusions originating from the Wolffian body, but from the uterine mucosa. The gland spaces may have been present in the tumor from the very beginning or they may have entered into its substance at a somewhat later period in consequence of inflammatory processes.

CAREY CULBERTSON.

**Oldfield: Ovarian Gestation.** *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiii, 41.

By Surg., Gynec. & Obst.

The patient was 37 years old, had been married 12 years, and had had no previous pregnancy nor menstrual irregularity. On May 1, 1912, the regular menstrual period was missed. May 17 she experienced sudden severe pain in the sacral region, accompanied by a vaginal discharge of blood, like menstruation in quantity and appearance. This continued for four days without pain. June 1 the period failed, and on the 24th, while in bed, the patient fainted. This recurred several times during the day, with discomfort in the abdomen and menstrual-like flow for three days. Fragments of decidua were passed and temperature arose to 101° F. Examination at this time gave a diagnosis of extrauterine pregnancy and operation was undertaken. Dark fluid blood was found in the abdomen and soft friable clots in the pelvis. The left



ovary was enlarged and this with its tube was removed. The tube was normal. The ovary was slightly larger than normal and presented a small oozing depression on the surface. Section showed many large blood-vessels about this area, some extravasated blood, a blood sinus, and one villus in situ. An oval compact mass of lutein cells occupied one end of this depression. Among the clots in the pelvis was found a mole. In this, on section, were found typical villi. The amniotic cavity was distorted and compressed. The blastoderm was extruded from the amniotic sac and lay on the surface of the mole.

CAREY CULBERTSON.

**Croom: Pseudo-eclampsia.** *Lancet*, Lond., 1913, clxxxiv, 35.

By Surg., Gynec. & Obst.

In this paper the author presents a case which was sent into his charge at the Edinburgh Royal Maternity Hospital as one of eclampsia. The patient, who was a secundipara and seven months advanced in pregnancy, had suffered from fits of a severe character for two days, with very marked coma. As there were no abnormal constituents in the urine, the toxæmia of pregnancy was eliminated, and there being no indications from the eye reflexes nor signs of any paralysis, the diagnosis was extremely difficult. The patient died, and as a result of the necropsy a tumor was found, of the size of a tangerine orange, lying within half an inch of the anterior end of the left hemisphere and opposite to the superior, middle, and inferior frontal convolutions of the convex surface of the hemisphere, and opposite those parts of the marginal and callosal convolutions which lie above the anterior half of the corpus callosum. The tumor consisted largely of layer upon layer of flattened, dead epithelial cells. Between these were to be found, in the fresh condition, crystals of cholesterol. Essentially the tumor consisted of cholesterol with a supporting stroma of connective tissue upon which it lay. The tumor was therefore a cholesteatoma.

The author comments on the comparative rarity of the tumor and its long quiescence in that situation. He describes a further case of meningitis which gave rise to pseudo-eclampsia also, thereafter giving a summary of similar cases that are to be found in literature on the subject, and discussing the cases in which there was a difficulty in the differential diagnosis of eclampsia.

**LaVake: Prophylaxis and Treatment of Eclampsia.** *J. Lancet*, 1913, xxxiii, 44.

By Surg., Gynec. & Obst.

LaVake here attempts only to sum up and emphasize the early symptoms and signs of toxæmia culminating in eclampsia, and to give a routine method of prophylaxis and treatment. His conclusions are based on experience as assistant resident obstetrician to the Sloane Maternity Hospital, New York.

Next in importance to albumin he regards the blood pressure as an index approaching eclampsia.

He would empty the uterus only for (1) the onset of convulsions, (2) albumin over 80 per cent, and (3) albumin over 50 per cent after 24 hours' treatment. He advocates nitroglycerin,  $\frac{1}{16}$  gr., every four hours for blood pressure over 150, with veratrum viride where the pulse is over 80, and chloral hydrate for rest and quiet when necessary. Rapid induction of labor is opposed, and he prefers the Voorhees bag as a means in slow induction. When rapid delivery is imperative he prefers normal dilatation, using vaginal hysterotomy only where the child is viable, where convulsions are occurring, and where the cervix is long and hard. The author advises strongly against chloroform as an anæsthetic and against phlebotomy. In accordance with this latter view he recommends uterine tamponade after delivery in order to prevent hæmorrhage. He further advocates that the infant be kept from the breast until the mother's condition is normal.

CAREY CULBERTSON.

**Liepmann: A Critical Study of Eclampsia and Anaphylaxis** (Eklampsie und Anaphylaxie: eine kritische Studie). *Gynäk. Rundschau*, 1913, vii, 55. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Eclampsia attacks robust, well-nourished women, whereas the weak and nervous are attacked by anaphylaxis. Edema and albuminuria are present in the former, while an exanthema accompanied by fever are the symptoms of the latter. If eclampsia were caused by an ingress of foreign albumin into the maternal blood from the placenta, then with each succeeding pregnancy the body would become more and more sensitive — it would be more frequent in multiparæ than in primiparæ. Since the converse is true, the author concludes that the albumin of the placenta which passes into the maternal stream in every pregnancy is not foreign albumin. Eclampsia and anaphylaxis have nothing in common. Eclampsia is an intoxication starting in the placenta. Speedy delivery is the safest treatment, because in this way the source of intoxication is eliminated.

DIENST.

**Zweifel: The Treatment of Eclampsia** (Ueber die Behandlung der Eklampsie; eine übersichtliche Besprechung). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Zweifel offers a detailed review of the treatment of eclampsia, historically considered. Modern treatment begins with Schröder, upon whose recommendation venesection was replaced by treatment with narcotics and diaphoresis. Dührssen's advance replaced this method by an active operative procedure demanding delivery of every eclamptic immediately after the first attack, or, if she has had several attacks, as quickly as possible. According to these fundamental rules the author has treated, in the years 1892 to 1895, 80 cases with a mortality of 15 per cent; from 1895 to 1901, with the same method, 143 cases with a mortality of



17.2 per cent; and from 1901 to 1910, 400 cases with a mortality of 18.5 per cent. Since examination of the blood has shown that it is less fluid the author has again introduced in his clinic, since 1910, the primary venesection at the onset of eclampsia, combined with Stroganoff's treatment. Never less than 500 cc. are taken, and in some cases the venesection is repeated. With Stroganoff's method medicamentation per os must be avoided on account of the danger of aspiration pneumonia, and stomach may have to be aspirated. Of 84 cases treated by this method 5 died, or 5.9 per cent. Two died of aspiration pneumonia, one of septic peritonitis, and two of eclampsia. Of the entire number, the last 64 cases recovered in order. The foetal mortality in the 84 cases was 34.5 per cent against 39 per cent and 43 per cent in the former series. Zweifel discredits the statistics compiled by Liepmann and Freund in favor of operative treatment, wherein the cases chiefly considered developed convulsions after delivery and where the high mortality (15.1 to 17 per cent) does not speak for early emptying of the uterus nor for the hypothesis that the toxins originate in the child or the placenta. The expectant treatment of eclampsia has further shown that the attacks cease and pregnancy, with living or dead child, continues, terminating in spontaneous delivery many hours, days, or even weeks later, with no subsequent convulsions. Through his results are excellent, the author holds his method in reservation until some hundred cases shall have run a better course than those treated by operations.

ENGELHORN.

**Eichmann: Toxicoderma of Pregnancy Treated with Ringer's Solution** (Schwangerschafts Toxikodermien durch Ringersche Lösung geheilt). *München. med. Wchnschr.*, 1913, lx, 183.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. u. d. Grenzgeb.

Rissmann (1912) treated 3 such cases with intramuscular injections of Ringer's solution, and shortly thereafter Eichmann reported favorable results by injecting 100 cc. into the gluteal muscles in three cases. Besides this, the patients are put on a vegetable diet. Eichmann regards eclampsia, toxicoderma and nephritis of pregnancy as expressions of intoxication from the alimentary tract. Ringer's solution dilutes the blood, and toxins increase the activity of the kidneys. Vegetable diet prevents the further formation of toxins.

TORGGIER.

**Kasashima: Active Treatment in Febrile and Septic Abortion** (Zur Frage über die aktive Therapie bei fieberndem und septischem Abort). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 73.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. u. d. Grenzgeb.

The author reports the results of the treatment of abortion at the Sellheim clinic in Tübingen. Of 121 so-called "afebrile" women, 29 when cleaned out digitally proved to be febrile. In the other 46 "febrile" cases, where the temperature was over 37.9° C. before treatment, one half were manually and the other half instrumentally treated. All

women recovered, 61 per cent becoming afebrile at once after the operation. The others had fever during the puerperium, generally for two days. Of 15 septic abortions 3 died, two of them under active treatment (12 cases) and the third under conservative treatment (3 cases). In his conclusions the author is reserved, because in but a few cases were bacteriological findings at his disposal. From these figures he believes that active therapy in abortion should not be considered peculiarly dangerous.

HOLZBACH.

**Barrett: Ovarian Tumors Complicating Pregnancy, Delivery and the Puerperium.** *Surg., Gynec. & Obst.*, 1913, xvi, 28.

By Surg., Gynec. & Obst.

In the consideration of this subject, Barrett seeks reply to these questions:

1. Shall the ovarian tumor, discovered during pregnancy, be removed even though symptoms be absent, or only slight, or does obstetric conservatism demand the expectant plan of treatment?

2. Do the complications of delivery and the puerperium in the presence of ovarian tumor warrant an expectant plan of treatment?

3. Is there a certain period of pregnancy most favorable for operative procedure, for which we should wait, or which, if past, should compel the patient to go to term?

4. Which more greatly predisposes to abortion — the removal of an ovarian tumor, or its presence?

5. Does the removal of double ovarian tumor necessarily result in abortion?

6. Should the abdominal or vaginal route be chosen for removal?

7. Does tapping, puncture, or induced abortion relieve a complicated situation sufficiently to warrant such procedure?

One hundred and fourteen recent cases have been collected for study in this paper, five of which were seen by the author. These cases are reported in detail, and statistics from the literature are presented. Of the 114 cases, 76 were operated on before term. Three of the mothers died and but one of these deaths was due to the coeliotomy. Of the 63 who survived but 9 terminated prematurely. Thirty-eight cases were treated expectantly, with these results. One mother died before term, 7 were lost at term, 7 children were lost; of 6 Cæsarean sections at term, 2 mothers were lost; of 7 cases unoperated, 4 mothers died; of 7 vaginal ovariectomies at term, one mother died; of 3 vaginal punctures one mother died; 6 abdominal ovariectomies were performed during labor and 3 during the puerperium; in general, a maternal mortality of 18.4 per cent.

As a result of his investigation the author offers the following conclusions.

1. That pregnancy frequently takes place in the presence of ovarian tumors, even though both ovaries be involved.

2. That with the onset of pregnancy we have two patients with one pathological condition, rather



than one patient with two pathological conditions, each with claims upon their constitutional rights to "life, liberty, and the pursuit of happiness."

3. That the growth of the ovum produces such changes in position and structure of ovarian tumors as to make it a menace to the child and mother during pregnancy, that extra hazards occur during labor and are at their height for the mother during the puerperium.

4. That induced abortion with its one hundred per cent of child mortality is unjustifiable, in that it offers no corresponding improvement in the condition of the mother.

5. The early removal of the tumor as soon as possible after its discovery, gives a high percentage of good results in both mother and child and removes the hazard during labor and the puerperium.

6. That abortion following ovariectomy any time during pregnancy is in proportion to the damage already done.

7. That tapping or puncture of the tumor shows too large a mortality to make them justifiable procedures, except as preliminary expedients in rare cases.

8. That the danger of abortion after double ovariectomies is not sufficiently great to call for other treatment than that accorded the single tumor.

9. The results during the latter half of pregnancy are such as to warrant removal of the tumor rather than to let the patient continue to term, the increased percentage of abortion being due largely to increased damage previous to or during operation.

10. A patient in labor with a complicating tumor should be placed in the most favorable surroundings possible, and labor allowed to terminate, if unobstructed. This should be facilitated by the use of forceps, if labor is at all difficult and the tumor located well above the pelvis; position and manual efforts may change a pelvic obstructing tumor into an abdominal non-obstructing one.

11. Tumors interfering with labor pains, or located so as to obstruct the outlet or presenting torsion, hæmorrhage, or suppuration, thus offering immediate abdominal complications, may be operated upon with Cæsarean section accompanying, or, if the outlet is adequate, as shown by previous easy labors, or by liberal measurements, and the soft parts well dilated, labor may be allowed to continue, after the removal of the tumor.

12. Vaginal Cæsarean section may be performed in some instances with inertia.

13. Vaginal puncture of an obstructing tumor may rarely be permissible, but should be followed by vaginal or abdominal removal before or after labor, as puncture with non-removal shows high mortality.

14. In all operative procedures during pregnancy great care should be taken in manipulations of the uterus.

15. The uterus shows such toleration, however, that necessary handling, even to stitching, need not be feared.

16. On account of the great risk of torsion and degenerations during the puerperium, an ovarian tumor should be removed as soon after labor as the patient's condition and surroundings will warrant. If delay is necessary, the tumor should be closely observed.

CAREY CULBERTSON.

**McDonald: Glycosuria in Pregnancy.** *Am. Pract.*, 1913, xlvii, 14.  
By Surg., Gynec. & Obst.

That true diabetes is a rare complication of pregnancy is first shown by McDonald, who then quotes Brocard's experimental work showing that glycosuria is much more readily induced in pregnant than in non-pregnant women. Eschner's and Williams' reports are referred to in detail, showing maternal and foetal mortality statistics. The author's indications for termination of pregnancy in diabetes are: persistent loss of weight, evidences of toxæmia not easily controlled, death of the foetus, and increase in the amount of sugar in spite of treatment. Because of the extremely high foetal mortality, he holds that the child is not entitled to the usual consideration. As a rule pregnancy can have only a deleterious effect upon the diabetes, while the chance of producing a healthy living child is comparatively slight, and a serious glycosuria is a grave complication of pregnancy. While the induction of labor is usually a simple procedure, it may involve considerable shock to the mother and precipitate diabetic coma. The author's conclusions are:

1. In diagnosis, eliminate other reducing substances and transitory forms. Include only those persisting in spite of treatment or showing definite diabetic symptoms.

2. The prognosis is guarded in any case, and is bad in marked ones, both for mother and child.

3. Interruption of pregnancy is advisable if the patient cannot be closely observed or if symptoms are not controlled by careful treatment.

4. A woman who has shown definitely diabetic symptoms in one pregnancy is assuming an unwise risk in going through a subsequent one.

CAREY CULBERTSON.

**Seeligmann: Surgical Treatment of Uterine Hæmorrhage During Pregnancy, Delivery and the Puerperium** (Die chirurgische Behandlung von Uterusblutungen in der Gravidität, Geburt und Wochenbett). *Fortschr. d. Med.*, 1913, xxi, 91.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author advises against tamponing the uterus in placenta prævia because of the danger of infection, and recommends the simple procedure of tearing the membranes and using the combined version of Braxton-Hicks. When this is impossible because of technical difficulties and in total placenta prævia he uses the metreurynter. This gives him a better prognosis for the child. In very difficult cases of placenta prævia, or when combined with a contracted pelvis, the author advocates Cæsarean section, although he personally has had no cases of this kind.



In cases of hæmorrhage following premature separation of the placenta when the uterus cannot be emptied through the natural channel, Cæsarean section must be thought of to save the life of the mother. In atonic post-partum hæmorrhage secacornin and pituitary extract are recommended of the newer remedies. In severe post-partum hæmorrhage the author has used uterine douches with sesquichloride of iron and Momburg's apparatus under certain precautions. He reports a case of total placenta prævia which was treated with the metreurynter and version.

HIESS.

**Dienst: A Further Report on the Changes in the Blood During Eclampsia and Nephritis of Pregnancy** (Weitere Mitteilungen über Blutveränderungen bei der Eklampsie und Schwangerschaftsnierleiden im Gegensatz zur normalen Schwangerschaft und über Massregeln, die sich daraus für die Therapie ergeben). *Arch. f. Gynäk.*, 1913, xcix, 24.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Dienst continues his investigations on the significance of fibrin-ferment and fibrinogen in cases of eclampsia and nephritis of pregnancy. Lausberg repeated some of the author's former experiments and arrived at conclusions at variance with those of the author, but Dienst replies that his methods were not the same and that Lausberg's conclusions should not be accepted.

The present work deals with the plasma of 83 women, including 42 cases of eclampsia and 6 of pregnancy nephritis. Normally, there is a decrease in the total albumins of the plasma during pregnancy. In all cases of the above named diseases that did not come on suddenly this decrease in total albumins is more marked. The nitrogenous substances that are not held by the albumins are unchanged in amount. Fibrinogen is most markedly increased in pathological pregnancies, while the amount of seroglobulin is decreased. Normally there are 45 to 55 mg. of fibrinogen in oxalate plasma, but 60 to 75 mg. during eclampsia. This is typical for eclampsia and is caused by a leucocytosis. The decrease in total albumins in normal pregnancy is caused by an increase in the amount of water in the blood. Zweifel has shown that the blood contains less water and total albumins during eclampsia. The oedema has its origin outside of the kidney. Dienst thinks the vessels are damaged by the fibrin-ferment, which is the true toxic agent in eclampsia. He isolated it chemically in nearly every case of eclampsia and nephritis of pregnancy. It is absent during normal pregnancy and in the non-pregnant. The fibrin-ferment, damaging the walls of the vessels, causes oedema, albuminuria, and therefore a decrease of albumin and an increase of fibrinogen. These changes are absent in acute cases, for here the fibrin-ferment overflows the blood and leads to a very pronounced fibrin formation which provokes the acute eclamptic attack. In 7 acute cases of eclampsia the total albumins and the water content of the blood were quite normal and the fibrinogen only slightly increased. When the fibrin-ferment

is present there is a decrease in the production of antithrombin by the liver. During the height of the attack the latter is entirely wanting, although it is present in the plasma during normal pregnancy. The true cause of eclampsia is the insufficient production of antithrombin and the ensuing overproduction of thrombin. The fibrin-ferment comes from the placenta, and on this account we find eclampsia only during pregnancy, especially toward the end thereof. The attack is precipitated as soon as the fibrin-ferment reaches a concentration sufficient to make fibrin from the fibrinogen. These conditions are ripe when fibrin-ferment is to fibrinogen as 1:215. In the treatment the author advises Stroganoff's narcosis, free venesection, and the hastening of labor. Hirudin can replace the antithrombin, but on account of its toxicity should only be used in critical cases. Drinking of acidulated water is a prophylactic.

SIMON.

#### LABOR AND ITS COMPLICATIONS

**Jacoby: Pituglandol in Labor** (Pituglandol als Wehenmittel). *Zentralbl. f. d. ges. Therap.*, 1913, xxxi, i.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author bases his results with pituglandol in labor on 20 cases in his private practice. There were 12 births at term, 2 deliveries in the eighth month, 5 artificial abortions and one premature delivery. In the first group of 12 cases the result was very satisfactory, including one threatening eclampsia and one breech presentation. Forceps were required five times. In the second group placenta prævia appeared twice, with one bad and one good result. In the third group, a case of premature delivery with fever and spontaneous labor resulted fortunately, but in the 5 cases of artificial abortion no second stage of labor could be effected. After a subcutaneous injection of 1.1 cc. strong labor pains set in, lasting regularly for about 3 hours. In 4 cases two injections were made, and the increased severity of the pains was quite conspicuous. Injuries to mother or child were not observed. According to the author's view, pituglandol is a harmless remedy (1) for overcoming primarily or secondarily weak pains, the influence being most noticeable shortly before the second stage of labor; (2) for accomplishing delivery more quickly in cases where the mother's condition is not good; (3) for quicker expulsion of the foetus in premature delivery.

GRÄUPNER.

**Hartung: A Case of Dementia Paralytica in Labor** (Fall von Dementia paralytica und Geburt).

*Deutsche med. Wchnschr.*, 1913, xxxix, 72.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

As a supplement to the article of Löwenhaupt (*Deutsche med. Wchnschr.*, 1912, No. 36) Hartung reports the history of a patient where a typical dementia paralytica developed during pregnancy. There were several remissions after delivery, as a result of which the disease was much protracted, ending in death six years later. Autopsy showed evidence of an old pachymeningitis.

SIMON.



**Rieck: Occlusion of the Rectum after Delivery in a Case of Rachitic Pelvis** (Darmverschluss nach Entbindungen bei plattem bzw. rachitisch plattem Becken). *Zentralbl. f. Gynäk.*, 1913, xxvii, 19.  
By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The patient was a primipara 30 years old, on whom a transperitoneal Cesarean section had been performed on account of a rachitic deformity of the pelvis. On the day following the operation the large intestine became distended with gas. Enemata, etc., were without avail, and on the third day symptoms of peritonitis developed. Rectal examination with the patient lying on her side caused the elimination of gas and faeces. Obstruction of the rectum between the uterus and promontory was easily palpated on digital examination. The author suggests the following procedure: Thorough elimination, with the patient in side-position; then the puncture of the colon with a hypodermic cannula. The patient is in knee-elbow position for the operation, and digital examination serves as a control.

KERMAUNER.

**Jaschke: The Use of Narcophin in Obstetrics** (Ueber die Verwendung des Narkophins in der Geburtshilfe). *München. med. Wchnschr.*, 1913, lx, 72.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Jaschke reports 45 cases in which he injected narcophin in doses of 0.03 (1 ampulla of morphin-narcotin-meconati) for the purpose of lessening the pains during labor. It has many advantages over other remedies, such as morphin, pantopon, etc. If one injection does not effect complete amnesia, it certainly relieves the pains in so far that even very sensitive persons are well satisfied. No bad after effects for mother or child have been noticed. In two cases there was no result. In its ideal effect narcophin produces an agreeable relaxation, and after half an hour the pain decreases distinctly so that the women utter no more cries. Only exceptionally is there a decrease in the activity of the labor.

EBELER.

#### PUERPERIUM AND ITS COMPLICATIONS

**Asch: The Operative Treatment of Puerperal Sepsis** (Zur operativen Behandlung puerperaler Sepsis). *Berl. klin. Wchnschr.*, 1913, l, 134.  
By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

Because of the inaccessibility of conservative therapy, the author recommends the abdominal radical operation and the ligation of the veins according to Trendelenburg. The removal of uterus, adnexa, and parametric infiltrate has given good results only in those cases in which a longer interval has passed by since infection took place; in recent cases, this method usually failed. In these the veins must be ligated as early as possible. Whether it is necessary to remove the thrombi as well is still being debated.

In a case of severe puerperal sepsis, in which a left-sided thrombosis of the spermatic veins was diag-

nosed, the author proceeded as follows: he opened the abdomen to explore the peritoneal cavity and was able to demonstrate only slight adhesions around the left tube and ovary. The right side was perfectly free. The thrombus extended from the left parametrium to the kidney. The peritoneum was now closed in the midline and freed laterally till the thrombus was exposed. The central ligature on the spermatic vein, which had to be applied close to the opening into the renal vein, cut through and necessitated a suture of the renal vein to stop the free hæmorrhage. The freeing of the thrombus with its periphlebitic deposits led deep into the parametrium as far as the wall of the uterus. Next the retroperitoneal wound cavity was tamponed and the tampon led to the exterior by a lateral incision through the abdominal wall. After reopening the peritoneum in the midline the left adnexa were removed intraperitoneally and a wedge-shaped piece of the uterus, in which the thrombosed veins lost themselves. This mass was removed together with the extraperitoneal thrombosed veins; the resulting slit in the ligamentum later was closed and the abdominal cavity completely closed. After free drainage through the lateral opening, the complete recovery of the patient occurred. GENEWEIN.

#### MISCELLANEOUS

**Murlin: Some Observations on the Protein Metabolism of Normal Pregnancy and the Normal Puerperium.** *Surg., Gynec. & Obst.*, 1913, xvi, 43.  
By *Surg., Gynec. & Obst.*

In three normal cases, two primiparæ and one tripara, the distribution of nitrogen and sulphur in the urine was studied by current methods of analysis. The patients were kept on carefully controlled diets and the urines were collected continuously throughout the observation periods, covering the last weeks of pregnancy and the entire puerperium. The conclusions reached were as follows:

1. The percentage distribution of the nitrogen and sulphur fractions of the urine was very nearly the same in the ante-partum and post-partum periods.

2. The total nitrogen in the urine shows a sudden increase, independently of the nitrogen in the food, at about the sixth or seventh day post-partum.

3. The nitrogenous autolytic products from the uterus are for the most part converted to urea before excretion.

4. The ammonia nitrogen is slightly higher in the ante-partum period than in the post-partum period.

5. The urea-plus-ammonia nitrogen in the ante-partum period is lowest in percentage of the total nitrogen, when the retention of nitrogen is probably greatest. This confirms the idea, expressed elsewhere for the dog, that the nitrogen held back for growth of the product of conception is potentially urea or ammonia nitrogen.



6. The formol-titrating fraction is the same after delivery as before.

7. The creatinin nitrogen is higher, both relatively and absolutely, before delivery than after; the creatin nitrogen higher in both senses after delivery than before. There is no indication in the urine of hepatic inefficiency in late pregnancy. Creatin in the urine before delivery may indicate a lack of carbohydrate in the food; after delivery it is always present during the involution period.

8. The N:S ratio in the urine of these patients was slightly higher than is usually found on an adequate diet. Because less food was ingested immediately after delivery than before, the ratio was higher in the post-partum period.

9. The inorganic-sulphate sulphur was lowest in percentage of the total sulphur where the retention of nitrogen was (probably) greatest, and highest where the retention was least. The neutral sulphur was least in percentage where the retention was least, but, owing to indicanuria, was not greatest where the retention was greatest.

10. A high percentage of neutral or unoxidized sulphur does not indicate diminished oxidation in the pregnant subject.

11. The distribution of the sulphur fractions indicates that the sulphur which is excreted as inorganic sulphate is the sulphur held back for foetal development.

#### Mayer: Some Rare Forms of Contracted Pelvis (Ueber einige seltene Formen von engem Becken).

*Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 53.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Mayer describes four pelvises.

1. A pelvis after the performance of two hebosteotomies. After the first sawing through, osseous healing occurred and the pelvis remained the same. After the second operation, however, only connective-tissue healing took place and the pelvic ring remained permanently enlarged, thus securing a considerable improvement as a result of a different method of bony union. Five and one half years after the second hebosteotomy spontaneous delivery occurred, though the head of this child had a greater circumference than that of the former.

2. A pelvis after two hebosteotomies. After the first union it was smooth and osseous and the pelvis functionally unchanged; after the second operation the bone united with a slick callus on the inner surface, whereby the pelvis became considerably narrower, though the conjugata diagonalis was increased. At the next delivery Cæsarean section had to be performed. The endeavor should be to gain, therefore, a connective tissue union after hebosteotomy. Disturbances in the gait need not be feared, because the pelvic ring is separated only unilaterally. The character of the bony union depends probably on age of patient, whether fully grown or not; on constitutional and local influences; on the width of the gap in the os pubis, fixation of free ends in healing, and on hæmatomata, infections, etc.

3. A pelvis narrowed by traumatic fracture of the acetabulum and central luxation of the head of the femur, which is functionally similar to the Chrobak pelvis. The mechanical difficulties in labor may be surprisingly slight, however, as an analogous case shows. Though the area of the acetabulum protruded 4 cm. into the pelvis, a child of 4000 gr. was born in a primipara, the second stage lasting only 1½ hours. The anterior parietal bone is held back a little, like the posterior in a rachitic pelvis.

4. A typical flat rachitic pelvis with luetic changes in the bones. The pelvis is rachitic with a slight protrusion of the symphysis as in osteomalacia, a narrow pelvic outlet, and a peculiar roughening and thickening of the bones. The first is explained as a syphilitic softening and the latter as periostitis luetica. The Wassermann reaction determines syphilis, the saber-sheath tibia being strongly suggestive as well. Cæsarean section was done for the eighth delivery, after seven children were born per vias naturales, four of whom are living.

WAGNER.

#### Leavitt: Moderate Degrees of Pelvic Contraction and Their Obstetric Problems. *J. Am. M. Ass.*, 1913, lx, 4. By Surg., Gynec. & Obst.

In generally contracted or simple flat pelvis, we are sometimes unsettled as to whether labor should be induced a few weeks before term, the forceps relied upon, pubiotomy performed, or abdominal section made. Craniotomy should never be necessary when reasonable facilities are at hand for doing clean surgery. With a true conjugate of 7 cm., a Cæsarean section is absolutely indicated; but when the true conjugate measures 9.5 cm. we may easily err in the choice of methods. In Leavitt's experience with high forceps and Cæsarean section, the former has exceeded the latter in mortality.

For convenience, pelvic contractions are divided into two degrees — absolute and relative; the former contemplates therapeutic abortion or Cæsarean section at term. With 7 cm. true conjugate as the dividing line, it was found in the Schauta clinic that no spontaneous births took place, and that intervention was required in 85 per cent of those having a true conjugate of 7.5 cm., 75 per cent having 8 cm., 50.3 per cent having 9 cm., and 24.4 per cent having a true conjugate of 9.5 cm. Every pregnancy complicated by a contracted pelvis is a law unto itself. When and why one procedure is better than another cannot be answered dogmatically.

LEO DWAN.

#### Rotter: The Treatment of Narrow Pelvis (Verfahren zur Heilung enger Becken). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 52.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Rotter performed a resection of the promontory in a case of generally contracted pelvis with a conjugata vera of 7.8 cm. The patient had had a number of miscarriages, and was not pregnant at the



time of operation. The peritoneum of the promontory was incised 6 to 7 cm., the subperitoneal fat, etc., was pushed aside, and the median sacral artery was ligated 2 cm. above the promontory. With a 4 cm. chisel the promontory was removed, the subperitoneal fat and peritoneum were approximated, and the abdominal incision closed. Healing took place by first intention.

In this operation a part of the lumbar vertebra, the intervertebral ligament, and a portion of the first sacral vertebra were removed. The periosteum being removed with the bone, callus formation is prevented. A piece of bone 2 cm. thick can be removed without any danger. It is advisable to operate when the woman is not pregnant. The gait, etc., are not affected by the operation.

WALTHER HANNES.

**Kehrer: Preliminary Report on Exact Measurement of the Pelvis by the X-ray** (Vorläufige Mitteilung zur exakten röntgenologischen Beckenmessung). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 55.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports that he has been working with Desauer, in Frankfurt, on the problem of measuring the pelvis by means of the X-ray. More exact reports will follow the completion of the work. The method of measuring is simpler and more exact than that given by Hänisch, permitting measuring of the conjugata vera within a millimeter when the promontory and symphysis appear sharply on the X-ray plate.

MUELLER.

**Martius: A Monstrosity with Persisting Cloaca, Band-like Ovaries, and Other Genito-Urinary Defects** (Ein Fall von persistierender wahrer Kloake mit bandförmigem Ovarium und anderen seltenen Missbildungen im Urogenitalsystem). *Frankf. Ztschr. f. Pathol.*, 1913, xii, 47.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The case here reported appeared first as a breech presentation, labor coming on during the seventh month of pregnancy and resulting in dystocia. In an attempt to pull the trunk through the birth canal the legs were torn off. The distended abdomen of the fetus was opened and the birth completed. Near the pelvis a cystic tumor the size of a fist proved to be a true cloaca, both colon and ureters emptying into it. The left kidney was displaced and adherent to the right. The right ureter emptied into the right side of the cloaca; the left was obliterated but attached to the left wall of the cloaca. A 6 cm. broad band of tissue on the posterior abdominal wall proved to be the ovary. The uterus was 1 cm. long and the left tube ended blindly. The external genitalia looked like those of a male (pseudohermaphroditismus femininus externus). The aorta branched atypically, and pulmonic stenosis with atrophy of the right ventricle existed. Another anomaly was the entire absence of the fifth and sixth ribs.

BERBERICH.

**Häberle: A Case of Double Deformity** (Ein Fall von Doppelmissbildung—Dicephalus tribrachius). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 39.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Häberle gives a detailed description of the monster. Upon a common strong trunk are two normally developed heads with two well-developed necks. The circumference of the right head is 34½ cm., of the left one 33 cm. The face of each head is directed forward so that the lateral surfaces of the skulls are opposite each other. The right and the left arm are normal, the middle arm shows distinct traces of fusion, such as a broad, thick humerus and two radii; a normal ulna, three normal fingers, one rudimentary index finger, and two thumbs. The scapulæ and clavicles are well developed. In the formation of the shoulder joint only the scapula of the left child participated. Spinal column, os sacrum and coccyx are double. The outer ribs are completely developed and united in front in a broad, simple sternum. The ribs between the two spinal columns are deformed. To the right from the right os sacrum and to the left from the left os sacrum are normally developed pelvic bones, which unite normally in front to form the symphysis. The lower extremities are perfectly normal. Thymus, thyroid gland, and all organs of the chest are double. Both pericardia are extensively adherent to the median surfaces and the anterior thoracic wall. Portions of the liver, pancreas, and stomach project through a gap in the diaphragm into the posterior part of the thoracic cavity. They are free of peritoneal covering. There is one large liver and two gall-bladders. The pancreas and stomach are double, in the left fetus normal, in the right one rudimentary, as is the right oesophagus as well. Except for the duodenum, the intestines are singly developed. One spleen and one right horseshoe kidney are found with double suprarenal capsules. On the right side is one ureter. The left kidney is missing. The genital organs are male, single, and perfectly normal. The delivery of the monster, which weighed 4000 gr., was spontaneous, the head of the right fetus coming first in face presentation, then the trunk, and then the second head. The death of the fetus occurred intra partum. There had been no previous deformities in the family, and the mother had already given birth to two healthy children.

HARM.

**Sarateanu and Velican: The Wassermann Reaction During Pregnancy and the Puerperium** (Die Wassermannsche Reaktion in der Schwangerschaft der Frauen und bei den Wöchnerinnen). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 89.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Sarateanu and Velican, of the obstetric clinic of the Maternity Institute in Bucarest, have examined the blood of 27 women (5 during pregnancy and 22 during the puerperium) and in one the cerebrospinal fluid, and draw from the results the following conclusions: The Wassermann reaction is a very



effective method for diagnosing and ascertaining lues in obstetrics. However, the reaction fails to give in every luetic gravida and puerpera an absolutely positive result. An absolutely positive result indicates lues with certainty, even when manifestations are missing; but a negative result does not justify a presumption to the contrary. With missing or uncertain luetic manifestations the result is generally negative. The Wassermann reaction proves that the maceration of stillborn or prematurely delivered fetuses is luetic in most cases. The number of premature deliveries with specific characteristics effects a lowering in the intensity of the reaction in general, but without having a definite, regular influence upon it. A review of the literature concludes the work.

SCHMID.

**Fox: Lithopedion: Presentation of Specimen; Report of Operation.** *J. Tenn. S. M. Ass.*, 1913, v, 351. By Surg., Gynec. & Obst.

The author reports a case of lithopedion which he removed. The specimen is that of a fetus of seven months' development and completely calcified. The features are well preserved and every part can be recognized. The calcification has extended to the placenta, so that the entire mass is almost as solid as stone. Eight years ago the patient missed her periods for seven months, during this time having all the symptoms of normal pregnancy, when labor pains came on, lasted a number of hours, and ceased. She had none of the usual symptoms of rupture of ectopic pregnancy. She lived in comparative comfort, marrying twice afterward, and finally consulted a physician owing to a marked constipation. The operation showed the lithopedion free in the abdomen except for adhesions to the fundus of the bladder, the anterior parietal wall, and a long band to the omentum. A careful examination of the uterus, tubes, and ovaries revealed nothing abnormal, or any evidence of its original attachment. The patient has been in good health since the operation.

C. H. DAVIS.

**Reder: Complete Absence of Milk in the Primipara.** *Am. J. Obst.*, N. Y., 1913, lxvii, 66. By Surg., Gynec. & Obst.

Reder tells of three primiparæ between the ages of 26 and 32 in whom no milk appeared after labor. All had instrumental deliveries, and nursing was tried at regular intervals. In two cases no colostrum could be expressed from the breasts. One of these two had the same findings after a second labor. One

woman had colostrum at the time of labor and had no milk reaction after delivery, and there was no family history which explained this rare occurrence. The women were said to be otherwise normal.

N. SPROAT HEANEY.

**Härtel: Salvarsan in Chorea Gravidarum** (Salvarsan bei Chorea gravidarum). *München. med. Wchnschr.*, 1913, lx, 184.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Because of the good results of Salinger and Szametz with salvarsan in chorea minor, the author injected 0.5 intravenously a patient pregnant 7 months who had chorea gravidarum and in whom the Wassermann reaction was negative. On the fourth day after the injection the patient began to improve, and on the fifteenth day she was well. Two months later the woman, then in the last month of pregnancy, was presented to the Gynecological Society.

TORGGLE.

**Weinberg: Sex Determination in Man** (Zur Frage der Vorausbestimmung des Geschlechts beim Menschen). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 147. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This article is in reply to one by Schöner (*Beitr. z. Geburtsh. u. Gynäk.*, 1912, xiii, No. 2). Schöner cannot predict the sex of the first child. According to his analysis, in families with two children the second child must be of the same sex as the first one if the second pregnancy belongs to the sixth period of ovulation. Such is the rule in half of his observations. With respect to Schöner's theory, the author considers only this one sixth. Of 94 cases, though, 44 were of different sex. Lest cases of premature delivery might disturb the theory, they have not been used. Those cases which conform to the theory may also be based upon error. Binovular twin pregnancies are explained as physiologic exceptions by Schöner, because he cannot bring them into unison with his theory. The statement of Schöner, that of the ovules of one and the same sex, two thirds should be present in one ovary and one third in the other, is incomprehensible, as is that of the sex selection with such regularity by the maturing ovule. Schöner further pays no attention to many sources of error; for example, that two ovules may be fecundated without proved twin delivery; that ovulation may continue during pregnancy, etc. Weinberg contends that conformation of Schöner's theory is correct in part only, since his prognosis is incorrect.

HIRSCH.



## GENITO-URINARY SURGERY

### KIDNEY AND URETER

**Beall: Subcutaneous Rupture of Kidney.** *Med. Rec.*, 1913, lxxxiii, 64. By Surg., Gynec. & Obst.

Injuries of the kidney are not common. Küster, in 7740 injuries at his clinics at Basel and Berlin, saw only 10 cases, and of these only one was an open wound. In 2610 autopsies following injuries, there were 13 in which the kidneys were damaged, 1 only being of a penetrating nature. Israel records only 1 operative case. The analysis of Keen's 155 cases shows 19 gunshot wounds, 8 penetrating wounds, 118 subcutaneous ruptures, 2 partial nephrectomies from rupture, 6 traumatic hydronephroses, and 2 ruptured ureters.

Subcutaneous rupture is the most common form of kidney injury and occurs more often in men than in women. Of 299 cases collected by Küster, 281 occurred in men. This great difference, however, is easily explained by the greater exposure of men to injuries of all kinds. However, Küster says that in loin injuries the greater mobility of the kidney in women is also a factor. Rupture of the kidney is, as a rule, the result of direct violence. Küster, in his experimentation on the mechanism of the production of the injury, tries to show that in most cases it is due to the effect of a force (hydraulic in nature) acting through full vessels and a full pelvis, causing the kidney to burst along the lines radiating from the hilum in the direction of the tubules. In crushing injuries, laceration by direct impact of a rib may occur; and still more uncommon is rupture by muscular action alone.

The symptoms are general and local, primary and secondary. The primary general symptoms are shock and hæmorrhage. The primary local symptoms are pain, tenderness, swelling in the region of the kidney, and hæmaturia. The pain is dull and deep seated, but the passage of blood clots along the ureter may cause paroxysmal attacks of acute pain. As perirenal extravasation ensues the pain becomes more diffuse and the swelling increases. If the peritoneum is torn, symptoms of acute peritoneal irritation will be added to the picture, though we may get these symptoms on the affected side from the retroperitoneal irritation alone. Hæmaturia is the most valuable of the local signs, and this with pain, tenderness and swelling in the loin leaves little doubt as to the diagnosis. Hæmaturia occurred in 65 of 71 cases tabulated by Maas and in 18 out of 26 cases reported by Morris. It comes on soon after the injury, varies in intensity, and may last from a few hours to many days.

The secondary general and local symptoms are

due to changes that take place in the kidney and perirenal tissues from infection or reactional processes following the injury and extravasation of blood and urine. Infection may take place from the bladder, or through a weakened intestinal wall or through the blood stream. The injury of the kidney itself may lead to infection with localized abscess formation or a unilateral chronic nephritis. Anuria has been noted, even where the injury was unilateral and of slight degree.

In rupture of the kidney the chief immediate danger is hæmorrhage and the most important late danger is infection. The prognosis depends upon the degree of the injury. In 108 cases collected by Grawitz, 58 recovered. In 14 instances the primary hæmorrhage caused death, in 7 suppurations of the kidney, and in 3 anuria. Of Küster's 306 cases, 222 were uncomplicated and had a mortality of 31 per cent. The prognosis is much more grave in children. Maas' figures indicate a mortality of 85 per cent in children under 10 years.

Many cases of rupture of the kidney recover spontaneously. In the absence of shock, with only a slight hæmaturia and a moderate amount of local swelling, rest in bed may effect a cure. Excessive pain may be relieved by anodynes and strapping of the parts. Medication is of doubtful value in controlling the hæmorrhage. Rest in bed should be prolonged, as the hæmorrhage is likely to occur. Immediate operation is indicated when the hæmaturia is severe, when a lumbar hæmatoma is growing, or when there are signs of intraperitoneal trouble. Continued or intermittent hæmaturia justifies an exploratory operation.

The nature of the operation must depend upon the conditions found. The indications are to control the hæmorrhage in some way and to provide a means of egress for the extravasated fluids. Extensive laceration or injury of the larger renal vessels will necessitate nephrectomy.

Except in mild cases, early exploration gives the best results. Delbet collected 319 cases, of which 225 were treated without operation, with 103 deaths. In 50 cases the kidney was exposed, with 2 deaths. In 44 cases nephrectomy was done, with 11 deaths. Watson's tabulation furnishes the following: Of 273 cases treated expectantly 81 died, mortality 30 per cent; of 99 treated by conservative operation 7 died, mortality 7 per cent; of 115 treated by nephrectomy 25 died, mortality 22 per cent.

Except for cases of mild degree, early operation for rupture of the kidney must be considered a life-saving measure.

H. D. ORR.



**Plummer: Dystopic Kidney.** *Surg., Gynec. & Obst.*, 1913, xvi, 1.  
By *Surg., Gynec. & Obst.*

The writer of this article gives a résumé of the subject, devoting attention principally to its clinical aspect, but also referring to the anatomy and pathology of dystopic kidney.

He adds 17 clinical cases to the 67 reported by Sträter in 1906, and makes a critical study of the 84 cases thus collected. He also describes 4 laboratory specimens and gives illustrations of the same.

**Definition.** By dystopic kidney, renal dystopia, or congenitally misplaced kidney is meant a condition in which the kidney is abnormally situated in the body, never having occupied its normal position.

**Anatomy.** In size, the dystopic kidney is generally approximately normal, although sometimes it is found to be considerably less. Its shape is often modified by its abnormal location in the body.

Its most striking anatomical peculiarity is its vascular supply, which always originates from a point lower than the normal and is usually a liberal one, two or more arteries and veins being the rule. The arteries have been found to arise from the lower portion of the aorta, the common iliac, the internal iliac (hypogastric), the median sacral, and the inferior mesenteric artery.

The ureter is generally shorter than normal. The adrenals are found in their normal locations, not accompanying the kidneys in their dystopic locations.

The location varies within wide limits from a position slightly below normal to one entirely within the small pelvis. The misplaced kidney is usually found on the side where it normally belongs, but it may be on the opposite side.

Defects in the genital organs of both sexes, of the bladder, and of the rectum have been noted in cases of dystopic kidney.

**Pathology.** In the majority of cases the misplaced kidney is normal in structure, but it may be subject to any of the pathological conditions found in normally placed kidneys, being especially prone to hydronephrosis or pyonephrosis. Calculus, sarcoma, tuberculosis, and cystic degeneration have been found.

**Clinical manifestations.** The symptoms caused by a misplaced kidney, otherwise normal, are most frequently similar to those caused by disease of the uterine adnexa, but sometimes the symptoms are referable to pressure on the rectum or bladder. In pathological conditions of the misplaced kidney there are found, in addition, the symptoms ordinarily accompanying those conditions.

**Diagnosis.** In cases otherwise normal, palpation is of great value. As a rule a dystopic kidney is but slightly movable, in contradistinction to floating kidney. Catheterization of the ureters may reveal a difference in lengths in the two ureters. The X-ray used with catheters in the ureters is of great assistance. Misplaced kidney is more common on the left side, while movable kidney is more common on the right side. If the kidney is exposed by opera-

tion, the most decisive finding is the abnormal vascular supply. Accompanying defects of the genital apparatus are suggestive of dystopic kidney.

**Differential diagnosis.** Dystopic kidney is most frequently mistaken for a tumor of the adnexa, especially an ovarian cyst. If pyonephrotic it may be mistaken for a pus tube. Cases have been mistaken for carcinoma of the bowel, hæmatometra, appendicitis, pericystitis, retroperitoneal cyst, or tuberculosis of mesenteric glands.

**Treatment.** It is well to consider separately the cases in which the kidney structure is normal and those in which a pathological condition of the dystopic kidney is present. As the dystopic kidney has been found to be solitary in a number of cases, it is imperative to determine the presence and functional capacity of the second kidney.

In pathological cases the treatment must be the same as in similar cases in normally placed kidneys, the method of approach in operative cases being modified so as to adapt it to the abnormal location of the kidney. In cases where the kidney is normal in structure no operative interference is indicated unless the symptoms are of considerable severity.

If the uterine adnexa are diseased in such a manner as to make their removal proper, confine the operative interference to the adnexa. On many cases all symptoms will disappear; if not, the kidney may be dealt with later.

If operation on the kidney itself is required, the operation of choice is dislocation of the kidney and reimplantation in a location where it will not be a mechanical hindrance. Nephrectomy should be a last resort. Ventral laparotomy is the best method of approach in operative procedure on a normal dystopic kidney.

A dystopic kidney, if located in the small pelvis, may cause disturbances of pregnancy and parturition. In most cases, delivery can take place without operative interference. The management of dystopic kidney complicating pregnancy and parturition is summed up as follows:

If discovered at the beginning of pregnancy: laparotomy, dislocation, fixation; if discovered later, consider the advisability of the induction of premature labor. Do not remove a normal kidney shortly before or during labor. If discovered after labor has begun, a pathological kidney may be punctured to allow delivery, nephrectomy to be done after the puerperium. If, during parturition, delivery cannot take place without injury to mother or child, either, in case of a dead child, perform craniotomy, or, in case of a living child, Cæsarean section or an operation to widen pelvis.

**Kretschmer: Unilateral Kidney Hæmorrhage with Reference to So-called Essential Hæmaturia.** *Surg., Gynec. & Obst.*, 1913, xvi, 34.

By *Surg., Gynec. & Obst.*

This article embraces a detailed report of a case of painless renal hæmaturia which might easily have been erroneously classified as one of so-called



essential hæmaturia. The author calls attention to the fact that these cases of so-called essential hæmaturia really have a pathologic basis. In the histological report all excised pieces of kidney in this case showed the presence of nephritic changes. A careful consideration of the literature revealed various lesions, not only of the kidney but also the renal pelvis in cases of so-called essential hæmaturia.

The author's conclusions are:

1. Unilateral renal hæmaturia does not always mean unilateral disease, as one may be dealing with a bilateral lesion, although only one side may be bleeding at the time of examination.

2. Absence of albumin and casts in the urine does not exclude the presence of nephritic changes in the kidney.

3. Cystoscopy and ureteral catheterization must be employed in each case to determine definitely the renal origin of the blood.

4. Histologic examination of several pieces of excised tissue, or preferably of the entire kidney, must be made in every case before a diagnosis of essential hæmaturia can be made.

5. Cultures of catheterized specimens of urine from each kidney, to determine a possible bacterial cause for the hæmorrhage, must be made in all obscure cases.

A bibliography of 72 numbers is appended.

**Truesdale: Unilateral Hæmaturia in Chronic Nephritis.** *Boston M. & S. J.*, 1913, clxviii, 156.

By Surg., Gynec. & Obst.

Truesdale reports two interesting cases of unilateral hæmaturia in chronic nephritis. The first case was that of an old lady of 70 years who noted hæmaturia of sudden onset, associated with no other symptoms. Ureteral catheterization revealed the right kidney as the source of the hæmorrhage. No medicinal treatment had any influence upon the bleeding until serum from a rabbit was injected, when the hæmorrhage stopped for three days. Nine months after the onset of the condition a nephrectomy was performed. The removed kidney showed no evidence of disease other than chronic intestinal nephritis, fatty degeneration and arteriosclerosis. The patient died a year after operation, from uræmia.

The second case was that of a man, 52 years of age, who for 30 years had been exposed to the effects of lead and had at intervals shown moderate symptoms of plumbism. The onset of hæmaturia was sudden and profuse. Later the bleeding diminished, but was always enough to impart a smoky color to the urine. Ureteral catheterization also revealed blood in quantity from the right kidney, while from the left there was no blood although there was a trace of albumin, with many casts of all varieties. In this case the bleeding gradually stopped and the patient had a respite for six months. These cases are not of extraordinary rarity, but are of great interest from a diagnostic standpoint.

J. S. EISENSTÆDT.

**Pettis: A Case of Neoplasm of the Remains of the Wolffian Body Simulating Hypernephroma.** *Phys. & Surg.*, 1913, xxxv, 27.

By Surg., Gynec. & Obst.

The patient entered the University Hospital complaining of a mass in the left side and pain in the right side. Nine months previously she had had an attack of jaundice accompanied by nausea and vomiting. The urine was highly colored, but there was no pain or clay-colored stools. This attack lasted about three weeks, and after the attack the patient felt well for about six months. Then she first noticed a mass in the left side just below the ribs, and she also experienced pain upon lying on the left side. Shortly after these new developments she experienced a severe sharp pain in the right side below the ribs, which radiated to the right side of the back and the right shoulder. She began to have fever, and the pain and fever continued up to the time she entered the hospital. The patient lost about twenty pounds in the six months previous to her coming to the hospital.

The physical findings were significant. The patient was a woman of medium build, sallow complexion, slightly icteric, and somewhat emaciated. Nothing of importance was found in the chest except a high liver dullness. In the abdomen were two distinct masses. On the left side a mass extended about three fingers below the costal margin; it had no definite edge and could be felt distinctly in the back. The mass on the right side extended from the costal margin downward as far as the umbilicus and a little to the left of the median line. It had a definite edge and felt like an enlarged liver. Both masses descended on inspiration. Catheterization of the ureters was attempted. It was successful on the right side, but the catheter could not be passed into the left ureter, nor could urine be obtained from that side. Laboratory findings were negative except for a slight secondary anæmia and a leucocytosis of 17,800. The most likely diagnosis was a hypernephroma with liver metastases.

Explanatory operation revealed a very large liver, containing many nodules (apparently malignant metastases). On the left side, beneath the spleen and above the kidney, was a mass the size of a foetal head. It was apparently cystic in nature. An opening was made in the lumbar region and more than a quart of what appeared to be altered blood was evacuated. The opening of the cyst was attached to the edge of the incision in the back and the abdominal wound closed. The patient died within the first 24 hours.

Post-mortem showed multilocular cystadenoma, with pseudomucin, near the left kidney, precisely of the nature of ovarian cystadenoma. It represented a Wolffian body teratoid cyst. A portion of the cyst showed transition of the cells from a benign to malignant type. Metastases were found in the liver, which was riddled with carcinoma, and also in the spleen, lung, and retroperitoneal and hæmolymp nodes.

JAMES H. SKILES.



**Braasch: Clinical Data on Malignant Renal Tumors.***J. Am. M. Ass.*, 1913, lx, 274.

By Surg., Gynec. &amp; Obst.

The surgical records of St. Mary's Hospital, Mayo clinic, show that 83 malignant tumors of the kidney were operated on up to July 1, 1912. The three cardinal symptoms of renal tumor—hæmaturia, pain, and tumor—were found present in but 32 of the 83 cases. Two of the symptoms were present in 37 cases and but one symptom in 14 cases. It is evident, therefore, that the diagnosis must more often be made with but one or two of the cardinal symptoms. Hæmaturia was present in 64 per cent, was the primary symptom in 36 per cent, and the only symptom in 12 per cent; a positive history of repeated hæmaturia, which alone is valuable, was obtained in only 50 per cent of cases. Microscopic blood in the urine is not of much practical diagnostic value.

In 65 patients, or 78 per cent, a tumor mass could be felt on clinical examination; its existence was known to 28 patients, or 34 per cent of the total; it was the first evidence of disease in 12 patients, or 15 per cent; 37 patients were unaware of its existence, although the majority of them had had more or less medical care previously; and it was given as the only symptom by 5 patients, or 6 per cent. Abdominal pain of varying degree was complained of by 68, or 82 per cent of the patients. It was given as a primary symptom by 27, or 32 per cent, and as the only symptom by 14, or 17 per cent. While dilatation of blood-vessels in the scrotum, bladder, and rectum occasionally occurs with various abdominal tumors, and may then be explained by mechanical pressure, the peculiar frequency with which they are found with renal tumors, together with the venous dilatation in the upper extremities and the common cardiac insufficiency, must be explained by causes other than mechanical. When this condition is suspected the radiograph may show the metastasis providing the bronchial glands are large and favorably situated.

Renal tumor evidently occurs more often in the male than in the female. It was found in 51, or 62 per cent of the males, and in 32 female patients.

Evidence obtained through chemical estimate of decrease in renal function consequent to tumor must be considered with caution. In the 22 cases with operation in which pyelography was employed, recognizable deformity was demonstrated in 17.

The results of nephrectomy were: Operative mortality, 11 per cent; three-year cure, 27 per cent; five-year cure, 10 per cent. The shorter the duration of symptoms prior to operation, the better the prognosis.

**Tisserand: Renal Decapsulation in Acute Toxic Nephritis** (Decapsulation rénale dans les néphrites toxiques aiguës). *Lyon chir.*, 1913, ix, 31.

By Journal de Chirurgie.

The author reports two cases of nephritis with anuria, following mercurial poisoning. In both

cases, decapsulation was followed by re-establishment of urinary secretion, but the patients died from the effect of poison.

Case 1. A woman of 25 years had swallowed 2 gr. mercury oxycyanide. The operation was on the fourth day. The patient has been anuric since the moment of the ingestion and showed very marked myosis. Decapsulation of the right kidney was performed. The kidney was very large and very congested. On the first day thereafter, 15 cc. of the urine was passed; on the second, 40 cc.; 120 on the third and fourth; and 300 cc. on the fifth. This urine was albuminous. In spite of the reappearance of the renal secretion, the general condition became progressively worse and death occurred nine days after the ingestion of the poison and five days after decapsulation.

Case 2. Woman of 24 years. Poisoning by sublimate; operation on the tenth day, after five days of anuria. Decapsulation of a very large and congested right kidney. Injection of serum containing glucose. Seventy-five cc. of urine were passed on the day following operation and there were several spontaneous voidings on the following days. Progressive weakness; death six days after decapsulation. At autopsy, the right kidney (decapsulated) appeared normal while the left kidney was gray and congested.

In spite of this double failure, the author believes that decapsulation should be done in toxic nephritis as soon as possible after anuria appears.

CH. LENORMANT.

**Taddei: Typhlo-Ureterostomy after Resection of the Cæcum, and Appendicostomy in the Treatment of Vesicular Exstrophy** (Sur la typhlo-urétérostomie après exclusion du cécum et appendicostomie dans le traitement de l'exstrophie vésicale). *Rev. d. chir.*, 1913, xlvii, 37. By Journal de Chirurgie.

If we admit that the diversion of urine, in the treatment of vesicular exstrophy, is actually the method of choice, it is evident that the deviation into the intestine is the most easily done, and the one which has given the best immediate results. By looking over the results of others the author has found that there is a great frequency of ascending infection from the implantation of the ureters in an infected cavity.

In order to better the technique, we have attempted the resection of the urinary reservoir and have isolated it to prevent the infection of its cavity.

The resections of Borelius and Dowden are incomplete with reference to the above technique.

Complete resections were done by Soubotine, by Hertz-Boyer and Hovelacque and by Cuneo, utilizing the resected rectum, or part of the intestine with the anal sphincter, as the urinary and faecal reservoir. Taddei criticises the above technique for the reason that it is impossible thus to get a complete control of the urine. He proposes a procedure based upon the complete resection of the cæcum with appendicostomy, followed by the im-



plantation of the ureters in the resected cæcum. The claims for the origin of this technique goes to Verhoogen, who used it unsuccessfully in two cases in 1908.

The researches of Taddei are based upon work with dogs and cadavers. The operation is divided into two steps, done at different times. At the first operation the cæcum is resected and an appendicostomy done; an ileo-colic anastomosis is made with the ascending colon. After some time, with the animal in this condition, the cæcal cavity is rendered aseptic through the appendiceal opening. At a second operation, the bladder is excised. The ureters are removed, leaving a small collar of the vesicular wall at their ends. The operation is done retroperitoneally for the greater part of the time; a part of the lower and inner surface of the cæcum is exposed retroperitoneally. On this retroperitoneal surface of the cæcum the ureters are grafted. They are pulled into the cæcum by a sound which is passed into the cæcum through the appendiceal opening. The two sounds are left in the ureters until there is firm union of the grafts. The capacity of the new reservoir would be sufficient, according to Taddei, and if necessary could at any time be relieved by a Pezzer sound.

We cannot see in what respect this result is superior to those of Cuneo and Marion and Hertz-Boyer, in which cases they were able to get good continence during the day and partial continence during the night.

The work of Taddei on dogs has given him a good opportunity to study the changes if any in the cæcal mucosa from the contact with the urine. He found that there was no metaplasia of the cæcal epithelium to that of the vesicular type.

According to Taddei, this operation would be indicated in patients who have sufficient resistance and in whom the kidneys are intact, in exstrophy of the bladder and in certain cases of irreparable vesico-vaginal injuries.

J. OKINCZYC.

#### BLADDER, URETHRA, AND PENIS

**Chetwood: Contracture of the Neck of the Bladder.** *J. Am. M. Ass.*, 1913, lx, 257.

By Surg., Gynec. & Obst.

The author maintains that while there may be other causes of bladder atony, the chief one is in the nature of circular, sphincteric and prostatic stenosis, causing incomplete and complete retention of urine. This appears in the young as well as in the old. It may occur independent of prostatic enlargement or be combined with it; is sometimes a fibroid stenosis, being mostly inflammatory or, may be confined entirely to the internal sphincter or encroach on the prostatic orifice and include a large portion of this section of the urethra, being amenable to surgical relief by complete excision, preferably by the galvano-cautery or by complete extirpation with the knife.

The author reports one case of this kind which

came to him for autopsy in which the urethral orifice was the size of a number 18 French catheter, and also was exceedingly rigid, the urethral orifice having lost all its elasticity. The microscopic examination of this specimen showed chronic and acute perifollicular inflammation.

The treatment of this class of case which the author has used for the past twelve years is the galvano-cautery knife used through a perineal opening.

V. D. LESPINASSE.

**Keyes: A Case of Carcinoma of the Bladder Controlled by the High Frequency Current.** *Surg., Gynec. & Obst.*, 1913, xvi, 79.

By Surg., Gynec. & Obst.

Keyes reports a case of definitely proven carcinoma of the bladder which, by the use of the D'Arsonval current and later the Oudin current, not only was kept under control but remained apparently cured for 18 months. He lays down the following clinical points relative to the susceptibility of bladder tumors to the high frequency current.

1. A tumor with an indurated base is incurable by burning. (Induration of the base may be determined by rectal examination.)

2. The size and multiplicity of tumors are not decisive elements in deciding against local treatment with high frequency; yet the larger and more numerous the growths, the greater likelihood of their having an indurated base, which forbids the hope of cure by burning.

3. Those tumors covered with extensive sloughing surface are not amenable to cure by burning.

4. Intractable cystitis is the most striking contraindication to cauterization. J. S. EISENSTAEDT.

**Werthern: Suture of the Bladder after Lithotomy in Children** (Ueber Erfahrungen mit der Blasennaht beim hohen Steinschnitt an Kindern). *München. med. Wochenschr.*, 1913, lx, 134.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In children with vesical calculi the author recommends complete closure of the bladder by suture as the quickest and most convenient method of healing after the high operation. Open treatment is warranted only if the bladder is severely inflamed and gangrenous. The after treatment and healing is on an average quicker in the sutured cases, even if a small urinary fistula should appear, as this always healed spontaneously where the bladder has been sutured. During the operation and after, to test its integrity, the bladder is always irrigated with boric acid and hydrogen peroxide solutions. The suture of the bladder is double and continuous, and drainage is maintained for from 8 to 14 days with a thick self-retaining catheter through a small incision made upon a curved dressing forceps, which is pressed against the perineum from within. Such direct free drainage guarantees constant emptying of the bladder and easy and thorough cleansing from shreds of tissue or coagulated blood. The small urethrotomy wound always heals spontaneously, even after a longer drainage. NITZSCHE.



**Geissler: The Value of Gonosan in the Treatment of Urethral Gonorrhoea** (Ueber den Wert des. Gonosans bei der Behandlung des. Harnröhrentrippers). *Reichs. med. Anz.*, 1913, xxxviii, 35.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author used gonosan with the usual Janet douches and protargol in cases of gonorrhoeal and non-gonorrhoeal urethritis. Purulent discharges soon became mucous; in one case after 7 days' treatment, but on an average after three weeks. The gonococci disappear in 4 weeks usually, whereas without the use of gonosan it took 12 weeks in one case, with 8 weeks as the average. A case of gonorrhoea treated with gonosan averages 6 weeks, while those treated without it average 10½ weeks. Complications occurred only when gonosan was not used; 4 cases of epididymitis and one of cystitis occurred in the series. Burning on urination disappears after a few days with the use of gonosan. It should be given early. In old cases one should not expect much.

VON MILTNER.

**Bruck: The Treatment of Gonorrhoea and Its Complications** (Die Behandlung der Gonorrhoe und ihrer Komplikationen). *Therap. Monatsch.*, 1913, xxvii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The diagnosis of gonorrhoea cannot be made exclusively clinically, i. e. from subjective symptoms, the presence of secretion, opacity of urine and so on, but has to be made etiologically too, by the proof of the presence of gonococci; only thus can the course and the influence of the treatment be controlled, and only in this way can a genuine gonorrhoea be differentiated from a postgonorrhoeic urethritis. The author establishes as a basis for the modern treatment of gonorrhoea the following: (1) Destruction and definite removal of the gonococci, if possible without increase, but certainly without removal of the inflammation and secretion of the mucosa (bactericidal therapy); (2) after definite removal of the gonococci, combating the remaining clinical symptoms (astringent therapy). The bactericidal therapy is applied best by silver-albumin preparations, from which, according to a chart by Liebert, even in very weak solution destruction of the accessible gonococci may be accomplished in a short time. These silver-albumin preparations not only possess this strong gonococcicidal power but also a marked remote influence, since they contain the silver "masked," thus not combining with the fluid of the tissues. Silver-albumin preparations possess no astringent properties to counteract the inflammatory activity in the mucosa, which must be thought of as naturally prophylactic. The principles for the modern treatment of gonorrhoea are therefore: (a) No antiseptic treatment; destruction of the gonococci on the surface and if possible deeper, without aggravating tissue reaction-protargol argonin, etc. (b) A mild antiseptic astringent treatment; destruction of the remaining gonococci and moderate reduction of the

inflammation by silver nitrate, ichthargan, albargin, or argentamin. (c) Concluding with a purely astringent therapy-zinc sulphate, bismuth, or alum. A new antigonococcicide is hegonon, recommended by Klingmüller and said to be superior to protargol. Another is argenti proteinic (Heyden), the good results of which Oppenheim is praising. Treatment with electromorph and thermopenetration is as yet of doubtful value. Internal treatment with balsam copaiba is of slight benefit and exclusively internal treatment must be considered as an error.

In conclusion, the chemotherapy lately employed by the author and Glück is mentioned, the theory of which is that silver solutions combine with strongly diffusing substances by which the silver is carried to the submucosa. When no result is obtained the fault is a biologic one, an immunity to silver on the part of that group of gonococci concerned having been acquired during the treatment. A second report is promised after further experiments.

LREBICH.

**Lothrop: Treatment of Hypospadias.** *Boston M. & S. J.*, 1913, clxviii, 48. By Surg., Gynec. & Obst.

Cases presenting a congenital deficiency in the floor of the urethra are divided into three groups: (1) The glandular type, which is most common and generally left untreated because there is no interference with the functions. (2) The penile type, which presents functional disturbances varying according to the location of the meatus. The nearer the meatus to the penoscrotal angle, the greater the disturbance of functions and the more probable penile deformity. (3) The scrotal type, which is rare and in which there is great deformity and most serious functional disturbance. The deformity makes coitus impossible and the location of the meatus keeps the adjacent parts irritated from frequent wettings with urine.

**Treatment:** The glandular type is so unimportant and the scrotal type is so rare and its attempted relief so unsatisfactory that only the penile type will be considered here. The author uses the flap operation described by Thiersch in 1869 for the treatment of epispadias and adapted later by Anger for cases of hypospadias with slight modifications required by the exigencies of each case. The flaps should be handled with delicate hooks and forceps so as to avoid unnecessary injury. If it is necessary to straighten the penis this operation should be done six months or so before attempting to correct the urethral deficiency. The straightening process is accomplished by making transverse incisions through the tissue below, between and extending into the corpora cavernosa. The penis is then extended so as to open the wounds and the opposite ends of the incisions are approximated and sutured longitudinally. The formation of the new urethra is accomplished by making two flaps with the penis in an extended position. The meatus is enlarged as a preliminary operation if necessary. The base of the first or smaller flap is parallel and



close to the line of the deficient urethra. The flap is of sufficient extent to fold back over a rubber catheter inserted into the bladder and left for 7 to 14 days. The second or larger flap has its free border parallel and alongside the line of the deficient urethra but on the opposite side. This is made large enough to reach across the new urethra and cover the area denuded by the first flap. The second flap should be made as thick as the tissues will allow and enough broader to lap over the anterior and posterior borders of the first flap. Frequently the catheter will require to be changed, according to circumstances. Sometimes a minor operation will be required later to close the small fistulae which sometimes persist in the vicinity of the original meatus. Mattress sutures of fine silkworm gut, wire, or horsehair are placed so as to hold the short flap in place over the catheter and draw the larger flap snugly into place over all. Usual dressings are applied. A moderate amount of oedema must be expected, careful attention must be paid to the wound during convalescence, and the catheter must be kept in perfect order and should be retained until the wound is healed. H. D. ORR.

**Scholtz: Modern Diagnosis and Treatment of Chancroids.** *Urol. & Cutan. Rev.*, 1913, xvii, 27.  
By Surg., Gynec. & Obst.

The author gives in detail the differential diagnosis and the modern treatment of chancroids. He mentions two new methods of treatment not mentioned in the text-books, which he describes as, first, the X-ray treatment, and second, the employment of radiant heat by means of the leucodescent lamp.

Scholtz is inclined to believe that modern clinicians are prone to slight this important malady, considering it so trite as not to warrant much attention, but he strongly emphasizes the fact that "chancroid is by far not a closed chapter in medicine, either theoretically or clinically, and deserves a greater attention at the hands of the profession than it has been granted heretofore." He brings out the differential diagnosis between chancroid and herpes genitalis, infected balanoposthitis, chancre, mixed infection, syphilitic flat condylomata, cutaneous gummata, epitheliomata and tubercular ulcer. The exact diagnosis in many cases can be made only after bacteriological search for *spirochæta pallida* and *streptobacillus* of Ducrey-Unna.

Among chemical cauterizing agents for chancroids, fuming nitric acid and pure carbolic acid are to be recommended; for active cauterization, the Paquelin or galvanic cautery is to be preferred. The use of silver nitrate and copper sulphate he most emphatically condemns. Among the antiseptic powders, iodoform, aristol, and iodol are best employed.

In all, 11 cases were treated by X-ray. All cases were of the phagedænic variety, which resisted all kinds of cauterization and antiseptic applications for more than two or three months. Scholtz does not recommend that so powerful a therapeutic agent

be used in the mild average case; he reserves same for the rebellious and serpiginous variety. The author reports rapid improvement in all his cases except one. This case not only did not improve, but actually grew worse. Seven cases were complicated with phagedænic buboes, one of the cases being bilateral. In 6 cases two ray exposures were necessary at one week's interval. In 3 cases one exposure was sufficient to bring about recovery. The X-ray exposures were as follows: strength of the current, 2 milliamperes; distance from the tube, 6 inches; duration of treatment, 10 minutes; exposure amounted to so-called half-erythema dose.

The second method advocated by Scholtz, namely, radiant heat by means of a 50 candle power therapeutic leucodescent lamp, was used on a few cases. The author does not mention the number, but cites one particular case of a man of 26 years who had two chancroids that resisted all manner of treatment and upon which, as a last resort, he tried "radiant heat." The result was that "a healthy reaction asserted itself after the very first exposure, and after ten exposures the ulcer had a healthy granulating surface rapidly undergoing epithelization." It is advised that, with this 50 candle power leucodescent lamp, daily exposures be given, of ten to twenty minutes, at a distance of six to twelve inches.

H. W. E. WALTHER.

## GENITAL ORGANS

**Leguen: Diffuse Perivesicular Abscess of Prostatic Origin** (*Le phlegmon diffus périvésical d'origine prostatique*). *J. d'Urol.*, 1913, iii, 1.

By Journal de Chirurgie.

The observations which Leguen published have brought to light many interesting facts about the pathological anatomy connected with the infiltration of urine. The infiltration of urine from the superior quadrant and the diffuse perivesicular abscess arising from the prostate had, up to the present time, never been observed with such accuracy and explained upon pathological findings. The descriptions were more or less theoretical.

The patient upon whom these observations are based entered the hospital with a diffuse perineal abscess. Because of long standing infiltration of urine, the tumor mass extending to the anus and scrotum, soon involved the tissues above the pubis and groins altering greatly the normal landmarks.

Upon making large multiple incisions the local condition was greatly improved, but the patient's general state remained poor and he gradually grew worse. He died on the eleventh day after entering the hospital.

Autopsy showed the following interesting conditions.

1. A urethral narrowing with displacement due to the infiltration.

2. A chronic suppurating prostate, anterior to the perineal infiltration, which completely destroyed the prostate. The mass had perforated into the



membranous urethra; the remaining part was unimpaired.

3. A diffuse perivesicular abscess. The whole bladder was involved in a zone of serous or seropurulent infiltration, which involved the subperitoneal tissues. Behind, above the seminal vesicles, there was a large oedematous mass, which extended the height of the bladder and made a large tumor mass which protruded into the cul-de-sac. To the right and left of the bladder, the perivesicular tissues were similarly infiltrated and oedematous. The infiltrating substance was more purulent in the dependent parts and more serous near the surface. The infiltration did not extend into the anterior perivesicular tissues. The anterior vesicular ligaments formed a barrier against the prostatic infection.

We are thus dealing with a serous or seropurulent pericystic, that is to say, a diffuse peri-vesicular abscess, and an infiltration of urine from the superior quadrant.

The prostatic abscess was the starting point for the double infiltration, superior and inferior. Somewhat similar cases have been reported (Motz and Bartring, Thévenot and Michel). This observation proves the possibility of infiltration of urine from the superior quadrant.

The author draws the following conclusions. First, clinically: There is the necessity of thoroughly familiarizing ourselves with the state of the prostate and surrounding tissues in a patient suffering from infiltration of urine, since the general condition of the patient remains poor during the gradual progress of the infiltration to the surface.

Second, therapeutically: Considering that similar infections are not beyond surgical assistance, these abscesses can be opened by the perineal route for the purpose of draining the prostate; the starting point of the infection. Another drain is inserted by the suprapubic route, exposing the prevesicular space through a point in the midline. This drains chiefly the lateral parts of the bladder. J. TANTON.

**Lowsley: The Human Prostate Gland at Birth; with a Brief Reference to Its Fœtal Development.** *J. Am. M. Ass.*, 1913, lx, 110.

By Surg., Gynec. & Obst.

This work shows conclusively that the prostate is developed from five centers or lobes—the anterior or ventral, posterior, middle and two lateral. The posterior lobe forms the apex of the prostate and is quite distinct from the rest of the gland. This fact is of considerable surgical importance to those performing perineal prostatectomy. The number of tubules opening into each varies from fifty to seventy-four with an average of about sixty-three. The author also calls attention to two groups of tubules which may be called accessory prostates, one of these being in the floor of the urethra just outside the bladder and the other being in the trigone of the bladder just inside the urethral orifice.

V. D. LESPINASSE.

**Young: A New Procedure (Punch Operation) for Small Prostatic Bars and Contracture of the Prostatic Orifice.** *J. Am. M. Ass.*, 1913, lx, 253.

By Surg., Gynec. & Obst.

The punch operation, done by means of a special instrument devised by Young, is in this article first placed before the profession in an extended way. The punch is a modified urethroscope with a slot cut out of its under side. After the obstruction is engaged in the slot a cutting mandarin is inserted which cuts off all the tissue inside the slot. Three cuts are usually made—one median and one lateral on each side. It is an operation applicable to prostatic bars and small obstructions in the posterior urethra and trigone of the bladder. One would imagine that this operation would be followed by severe hæmorrhage; but Young overcomes this hæmorrhage by means of a two-way catheter put in place immediately after the operation, and irrigation through the catheter for 24 or 48 hours.

The operation is applicable in the following types of cases: bar of contracture of the vesical orifice; prostatic bar of contracture with diverticula; prostatic bar of contracture with vesical calculus; prostatectomy cases with incomplete results; median bar with trigonal elevation and obstruction.

This operation has given excellent results in the hands of its originator and a few others who have performed it. It is an operation which must be restricted to certain types of cases. It seems to be the safest and surest procedure which has yet been introduced.

V. D. LESPINASSE.

**Plondke: Surgery of the Prostate, with Special Reference to Preparatory Treatment and Anæsthesia.** *St. Paul M. J.*, 1913, xv, 1.

By Surg., Gynec. & Obst.

The author estimates that 33 per cent of all men over 50 years of age suffer from enlarged prostate, that 10 per cent of these require treatment, and that catheter life results in 100 per cent mortality within an average period of four years. Arteriosclerosis and resultant diseased condition of the various organs usually go hand in hand with hypertrophy of the prostate. Before any operative procedure is attempted, the existing diseased conditions are carefully investigated and appropriate treatment employed. Special attention is given to the infected bladder, which is cleansed thoroughly several times daily with normal salt or boric acid solution. This is followed once a day with a half ounce of 5 per cent solution of argyrol, allowing it to remain in the bladder, thus sterilizing the residual urine. When the infection is severe and the urethra very sensitive, a large size trocar is plunged into the previously distended bladder above the pubis; the bladder is examined and treated through this opening. Nitrous oxide, if administered by an expert, should be the anæsthesia of choice; otherwise ether should be used. Chloroform is too irritating and depressing. Where a general anæsthetic is contraindicated, spinal analgesia with stovain is



recommended. The choice of operation is left to individual preference, but the surgeon must always remember that the patient should be in the best possible condition; he should receive the smallest possible amount of anæsthetic, and the operation should be finished in the shortest possible time.

**Freyer: One Thousand Cases of Prostatectomy.**

*Am. J. Dermatol.*, 1912, xvi, 627.

By Surg., Gynec. & Obst.

The author reviews his series of 1000 prostatectomies. Three of his four cases reported eleven years ago are still alive and free from urinary troubles. Average age of patients operated upon

was 69, the oldest being 90 and the youngest 49. The weight of the prostates removed varied from one-half ounce to seventeen ounces. Among the various complications noted were cystitis, calculus, pyelitis, kidney disease, heart disease, thoracic aneurysm, chronic bronchitis, paralysis, various forms of hernia, hæmorrhoids and cancer of some organ other than the prostate. There were 55 deaths, or a mortality of  $5\frac{1}{2}$  per cent. Causes of death, as given, were uræmia, heart disease, shock, exhaustion, sepsis, mania, malignant disease of the liver, bronchitis, pneumonia, heart stroke, pulmonary embolism, cerebral hæmorrhage and pancreatitis.

HERMAN L. KRETSCHMER.

[Monograph]—**Kleinschmidt: Urinary Secretions; Their Physiography and Pathogenesis** (Die Harnsteine; ihre Physiographie und Pathogenese). Berlin: J. Springer.

By Surg., Gynec. & Obst.

In this interesting monograph the author takes up the pathogenesis and physiography of the urinary concretions. He felt dissatisfied with the prevailing theories, mainly for the reason that the investigation of the chemical compositions had not been thorough enough. While in a general way the chemical nature of the constituents of urinary calculi has been known, a systematic quantitative analysis was lacking. With the idea of supplying this knowledge the author examined 56 calculi, laying particular stress on the examination of the various layers of composite concretions, and thus gaining authentic information about the nature of the nuclei of the various concretions. The essayist presents the whole problem in the form of the following questions:

What rôle does the organism play in the formation of concretions?

What are the primary causes of the formation of the various concretions, and what are the last exciting conditions for the appearance of the sediments and the calculi?

Is it possible to determine the genesis of the calculi from their structure, and is it possible to supplant by a genetic one the mere descriptive division of the various concretions?

In order to answer these questions the author made a series of cuts through the stones at his disposal, which cuts were ground down to extreme thinness, in this way permitting an insight into their finest structure and a chemical analysis of the constituents of their different layers. He compared the results of his investigations with the products of a thorough analysis of the prevalent theories, and arrived in this way at conclusions that are apt to shed a new light on our conception of the pathology of urinary concretions.

So far, Ebstein's theory has been generally accepted; he found that every urinary concretion contained an organic basis or skeleton, and he considered the formation and presence of this organic skeleton an indispensable premise for the formation of any urinary concretion, a condition *sine qua non*.

Kleinschmidt shows now that the organic basis of the urinary concretions is not a specific coagulating substance secreted by the uropoietic system, but that in most of these cases the albumin normally present in the urine is in very faint traces, and that it becomes only traceable and visible in the course of precipitation of the crystalloids. If, occasionally, the normally low percentage of the urinary albumin happens to be increased by inflammatory processes, these pathologic albuminates will participate in the formation of the organic skeleton, being dragged down by the precipitating crystalloids in the same way as is the normally present albumin; but if such pathologic albuminates should precipitate like fibrin, then they can no longer be used for the formation of calculi but will lead to incrustations like any other necrobiosing and coagulated tissue arrested in the urinary system. This becomes apparent if one considers that so far none of the morphologic or tinctorial examinations has shown that a fibrinogenous substance is the organic stratum of urinary concretions.

Furthermore, while in the stones that Schade produced in the laboratory the coagulated fibrin determined the form of the concretions, and, after the artificial dissolution of the crystalloids, the fibrinous skeleton became distinctly visible again, in the genuine urinary concretions the structure is determined by the specific nature of the crystalloids, depending on the laws that are governing this particular crystallization.

Therefore we have to conclude that the so-called organic skeleton is not a primary formation nor an essential premise for the building up of urinary concretions, but simply a concomitant incidental phenomenon. After it was once demonstrated that the Ebstein theory based on the conception of a specific organic basis for the formation of urinary concretions became untenable, there remained as an essential factor for the formation of these concretions only an excess of the saturation with stone-building substances of the urine. In this connection there is to be considered the primary formation of



concretions that may form the nucleus for an appositional growth of large concretions and the conditions that will lead to this secondary stone formation, which event may occasionally give rise to the building up of calculi whose various layers contain different "stone-builders."

The nuclei are most frequently composed of uric acid, due to uric acid infarctions. Ebstein's theory that these infarctions are formed by the necrosing of the tubular epithelia under the toxic influence of the uric acid, and that they then become impregnated with the latter, is repudiated by the essayist in conformity with the results of Aschoff's and of his own investigations. Both authors were able to demonstrate that the flooding of the blood with uric acid in animal experiments suffices to produce an infarction analogous to the infarct observed in the human being. We are therefore compelled to ascribe the formation of the infarct to the excessive and sudden elimination of uric acid. As a matter of fact, the elimination of the uric acid is much greater in infants than in adults.

If the crystallization of the uric acid occurs in the bladder, and if no previously formed nucleus be present, then, provided the bladder function is sufficient, these crystals will be voided without difficulty as uric acid gravel. In case the emptying of the bladder is incomplete, for instance in prostatic hypertrophy, crystals will be retained and may give rise to calculus formation. If a nucleus is once formed in the bladder and remains there, additional crystal will precipitate upon it, and the final result will be the formation of many layers of a secondary stone.

It is, of course, obvious that after a nucleus is once established, chemically different layers may be precipitated on it if an oversaturation of the urine with other stone-builders occurs; for the formation of phosphates an alkaline reaction of the urine is necessary, which condition may be brought about either by bacterial influence or by the effusion of blood into the urine, both of which conditions may result from traumatism inflicted on the bladder wall.

As a final result of his investigations Kleinschmidt arrives at the following division of the urinary concretions:

1. Non-inflammatory stones: (a) primary formation of a concretion — formation of a nucleus; (b) secondary formation of a concretion — formation of layers.

These primary calculi are formed through the increased elimination or abnormal precipitation of a stone-building substance, which condition may be of a transitory character only. To the secondary stones of this group belong all those concretions that are formed in a normal urine around a nucleus. To the non-inflammatory stones belong the uric acid stones, the xanthin, the cystin, the calcium-oxalate, and the calcium.

2. Inflammatory stones: (a) primary stones; (b) secondary formation of stones — formation of layers — combination stones.

For their formation the same conditions as mentioned for Group 1 hold good, except that an additional factor as to their growth is present, viz.: inflammation of the urinary system in one or all of its parts. As the stone-building substances are to be considered phosphatic ammonia-magnesia, ammonium murate, and calcium carbonate, uric acid is found to be the substance which most frequently forms the nuclei; more rarely nuclei consisting of xanthin, cystin, oxalates, or phosphates are found.

All inflammatory stones have their origin in bacterial infection and in the subsequent ammoniacal fermentation of the urine. The author concludes that the divergent theories concerning the etiology of stone formation as propounded by surgeons and pathologists may be explained by the fact that the stones examined by surgeons will of necessity be inflammatory in nature, since they give rise in the majority of cases to rather pronounced clinical symptoms, while those examined by the pathologists will in the vast majority of cases be uric acid stones, according to the greater general frequency of their occurrence.

HERMAN L. KRETSCHMER.



# SURGERY OF THE EYE AND EAR

## EYE

**Aizner: Operation for Ptosis with Free Transplantation of Fascia** (Zur Ptosisoperation mit freier Fascientransplantation). *Zentralbl. f. Chir.*, 1913, xl, 153. By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

The author employed free transplantation of fascia for the removal of a ptosis of the left upper eyelid. The flap was taken from the thigh. Union with the upper tarsal border and the frontal muscle was obtained by making an incision and undermining the skin. The result at first was not very good, so that correction was considered. One half year after the operation it was found that the left palpebral fissure was larger than the right, and that the upper lid could not be closed completely. These changes were traced to shrinkage of the aponeurotic flap, which when the eye was closed could be distinctly felt in the form of a tense band. The case shows that transplanted fascia has a tendency to shrink, and that this tendency must be reckoned with in transplantation. **HOFMEIER.**

**Metz: Vernal Conjunctivitis.** *Cleveland M. J.*, 1913, xii, 29. By Surg., Gynec. & Obst.

Spring catarrh is a chronic affection of the conjunctiva, most commonly bilateral. No portion of the conjunctiva is exempt from involvement in the process, though it is rare to find in one case the participation of the whole membrane. More usually the affection of the tarsal or the bulbar conjunctiva is more prominent.

Hypertrophy of the limbar conjunctiva occurs generally on one side of the cornea and is semi-transparent, of pinkish or brownish color, and of gelatinous appearance. The surface may be smooth or uneven. There are small whitish or yellowish white spots in this pericorneal hypertrophy appearing, with the loupe, like white colonies of microbes on a gelatin medium. They stain with fluorescein and are considered by Herbert and Trantas as characteristic of spring catarrh. They are minute epithelial vesicles caused by a degeneration of the epithelial downgrowths, which become absorbed, leaving cystic cavities.

The change in the conjunctiva of the upper lid is characterized by the formation of hard flat papillæ which are greatly projecting, pale, and sharply outlined. They are tessellated or pavement-like in appearance and over the whole is a milky opacity. The papillæ may be very small and appear with the loupe only as knuckles of vessels. The epithelium of the papillæ of the tarsal conjunctiva is thickened, and epithelial plugs descend some distance into the stroma, though the basement membrane is always intact.

The secretion is usually scanty, mucous or mucopurulent, and characterized by the large number of eosinophile cells in proportion to the total number of wandering cells. The downgrowths are constantly being absorbed, and the cavities thus formed are filled with eosinophiles which are erupted at the surface. If the lid is held everted a scanty, thin, filmy exudate will be formed on the conjunctiva.

The duration of the disease is from 3 to 20 years.

Theories as to cause include atmospheric heat, ultraviolet rays, and bacteria. Protection against the first two plays an important part in the treatment.

**EARLE B. FOWLER.**

**Cohen: The Clinical Course of Conjunctival Affections Associated with So-Called Trachoma Bodies.** *Arch. Ophthalm.*, 1913, xlii, 29.

By Surg., Gynec. & Obst.

Cohen submits further data to prove that the so-called trachoma bodies are the etiological factor of a conjunctivitis independent of trachoma, as hypothesized in an article two years ago by Noguchi and himself. Twenty-one of their first series of cases were followed. These are stated to have infected and caused 41 other cases; 10 trachomata caused 19 others; 6 blenorrhœa neonatorum non-gonorrhœica caused 2 others; 6 blenorrhœa gonorrhœica in young girls caused 20 others.

The transmitted disease simulated trachoma for a time only; the course was shorter, more acute, and without subsequent scar formation and pannus. The so-called trachoma bodies were present from 2 to 9 months. Follicular and papillary stages were present. Restoration to normal usually required 3 to 4 months, in one case 9 months.

The 6 blenorrhœa neonatorum non-gonorrhœica cases came on 4 days to 2 weeks after birth, resembled mild cases of gonorrhœa, became a finely papillary conjunctivitis after one week, regressed along with the gradual disappearance of the bodies in about 2 months and the conjunctivæ were normal in 3 to 4 months.

In all the 6 original cases of blenorrhœa gonorrhœica in young girls and in the 20 cases arising from them, gonococci were found along with the so-called trachoma bodies, "but the irregularity of their discovery and the inconstancy of their occurrence were noteworthy." In the original 6 cases the vaginal secretions showed gonococci but no bodies at first. In most cases the conjunctiva became normal in 3 to 4 months.

The author contends that true trachoma cannot exist in such a mild form, and that blenorrhœa neonatorum non-gonorrhœica associated with "trachoma" bodies is not trachoma, because (1) infec-



tion could only occur through the maternal genitalia, (2) it does not resemble trachoma clinically, and (3) there is spontaneous cure without sequelæ. In blennorrhœa gonorrhœica in girls the bodies have only become engrafted on the gonorrhœal disease.

Final proof cannot be brought until the organism can be cultivated.

FRANCIS LANE.

**Credé-Hörder: Non-gonorrhœal Ophthalmia Neonatorum** (Ueber nichtgonorrhœische Ophthalmoblennorrhœen der Neugeborenen und Säuglinge). *Deutsche med. Wchschr.*, 1913, xxxix, 74. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Many cases of ophthalmia neonatorum are not of gonorrhœal origin. Yet even with careful treatment these may run a slow course, though there are in most cases no serious results. The clinical aspect is about the same as in Neisserian infection, agglutination of the eyelids, reddening of the palpebral fissure, serous or purulent secretion, and reddening of the conjunctiva. The cornea is never affected, the secretion is but slight and is more serous in nature. The microscopic examination shows only leucocytes and a few epithelial cell bacteria of various kinds being found, but only few in number, mostly diplococci, gram-positive in one case, typical pneumococci running a very obstinate course. In three mild cases of short duration, thick plump rods of 2 to 3 were found, intracellular or in the field between the leucocytes. The author calls these bacilli coli commissuris, and gives detailed report of the bacteriology. The clinical course depends on the producing agents. Blennorrhœa caused by gram-positive diplococci is mostly late, appearing usually on the sixth to the sixteenth day of life. The secretion is almost always serous, and can be stopped within 8 to 10 days by cleaning with a solution of boric acid. Relapses are frequent. Far more severe are the pneumococcal infections which set in on the eighth day with redness and swelling, becoming serous on the second day, purulent on the third day, and slightly sanguinous on the fourth. Oedema was marked. Treatment consisted in irrigating with a solution of boric acid and on the first and fifth day in the installation of 1.3 per cent argentum aceticum. The eye which was first affected was cured after 16 days, the second not clearing up for 10 days more. The three cases which were caused by the bacillus coli appeared on the fifth, seventh and eleventh days, respectively, after birth and lasted from four to nine days. The infection was confined to one eye, the secretion being serous or slightly purulent. These cases were irrigated with boric acid solution. Treatment must be persisted in, since these infections, while never dangerous to the sight, if neglected may develop into chronic conjunctivitis.

ZWEIFEL.

**Jess: On the Chemistry of Senile Cataract.** *Arch. Ophthalm.*, 1913, xlii, 45. By Surg., Gynec. & Obst.

The author discusses a new albumin reaction first observed by Heffter with egg albumin, and which

could not be obtained with serum albumin, fibrin, egg-globulin, keratin or pepton. This is a red coloration resulting from the use of sodium nitroprusside and ammonia.

Arnold later found this test to be positive in a series of animal as well as plant albumins. The proteid substance of most of the organs (liver, thymus, muscle) reacted positively, whereas connective tissue and the albumin contained in the excretions and secretions did not give the reactions. The reaction was less strongly marked in the albumin of plants, and was most strongly marked in the lens of the eye. Arnold, as well as Heffter, considers the red coloration to be due to the presence of the cystein group in the albumin molecule, for of all the amino-acids in albumin cystein alone becomes red with sodium nitroprusside and ammonia.

Reis was able to prove that in the normal lens there was no difference in the behavior of the peripheral and central layers with the cystein reaction. In senile cataract the reaction disappears entirely or in part, whereas a traumatic cataract reacts like a normal lens.

Red coloration was entirely wanting in a hypermature cataract, while in a mature cataract it was absent or only faintly present in the nucleus, and was a trifle more marked in the cortex. In immature cataract the cortex reacts plainly, and in some cases even the nucleus reacts.

Reis separated the cortex from the nucleus and examined each for cystein by rubbing up some of the lens material on tissue paper with a spatula and pouring over this a few drops of a 4 per cent sodium nitroprusside solution and then a few drops of ammonia.

Jess gives his finding in a few cases. He also isolated in 120 cows' lenses and in 36 normal human lenses the B-Kristallin and a-Kristallin, and got an a-Kristallin free from albumin which still gave a strong positive reaction. He says the most interesting point of the entire examination, and for the understanding of senile cataract the most important, is the complete absence of the reaction in that albuminous body which is insoluble in water and which constitutes about one half of the entire albumin content of the normal lens.

In agreement with Michel and Wagner he found the amount of soluble albumin in senile cataract to be diminished. As it is just these forms of albumin, namely, a-Kristallin and especially B-Kristallin, which do not give this reaction, the negative result of the nitroprusside-ammonia reaction in senile cataract is explained very simply by the more or less complete loss of the soluble albuminous material.

C. H. DARLING.

**Rogers: Observations Concerning Foreign Bodies Within the Eye or Orbit.** *Ophthalm.*, 1913, ix, 153. By Surg., Gynec. & Obst.

The author's observations are based upon 116 cases which were subjected to operations with vari-



ous types of magnet, and show that while the portable magnet with its point within the globe gives a lower percentage of failures to remove a foreign body than the giant type, its functional results are inferior, and it yields a higher percentage of eyes ultimately lost from degenerative reaction. There were 12 cases in which the giant magnet alone was used, and in none of these was visual acuteness after operation less than before; 7 cases in addition, in which closure of the original wound was the only reason for combining the auxiliary magnet, did not alter these results except when inflammatory reaction had developed before the operation.

A giant magnet of less than 10 amperes capacity is a pitfall rather than a dependence; but an appliance of this power is not to be used carelessly, and unless the injunctions of Haab are followed in regard to the gradual increase of force and direction of the line of traction, disappointment will surely result. Forty to fifty minutes are often required to bring a small foreign body properly into the anterior chamber. It is not well adapted to the removal of large bodies or small encapsulated substances.

Perhaps the most valuable deduction from this series of cases is the evidence that a much larger percentage of these foreign body cases should be subjected to immediate enucleation instead of embarking upon the tedious convalescence and false security involved by the extraction of large foreign bodies or foreign bodies with extensive traumatism. The author has never succeeded in preserving useful vision when the ciliary zone has been extensively lacerated with much loss of vitreous, or when the foreign body has had a total area approximating 10 mm. In any case, if ciliolysis persists for more than three months, enucleation is advisable in an individual dependent upon his occupation for his maintenance.

It was somewhat surprising to note in the discussion connected with the presentation of this paper some tendency to disregard the necessity of X-ray localization before undertaking removal.

**Stover: Röntgenography of Foreign Bodies in the Eyeball.** *Ophth.*, 1913, ix, 178.

By Surg., Gynec. & Obst.

The article deals in a general way with the value and methods of using X-rays in the diagnosis of foreign bodies in the eye. Most foreign substances which are likely to be lodged in the eye are capable of demonstration and recognition if sufficient skill and experience are employed. Among the bodies of lesser density which are visible on only the most perfectly executed Röntgen plates is glass of the thinness usually seen in incandescent bulbs.

The matter of accurately localizing foreign material which shows on the test plates is of exceedingly great importance, since in a given case it may mean the saving or the loss of an eye. Sweet's method has been adopted by the author as a basis for his work. By citing a number of cases in which mistakes have been made by oculists in

ignoring the value of X-rays or in depending upon the results of incompetent workers, the need of mathematical precision in technique and guarded acceptance of the localization by a radiologist of unknown ability is made clear.

HOLLIS E. POTTER.

**Ormond: The Eye in Relation to Tuberculosis.** *Practitioner*, 1913, xc, 256.

By Surg., Gynec. & Obst.

It is Ormond's experience that the majority of patients who have had proved tuberculous lesions of the eye have been robust, healthy-looking people. The tubercle bacillus attacks the ocular tissues much oftener than was supposed before the use of Koch's, Calmette's and Von Pirquet's tests.

Tuberculosis of the conjunctiva is an infective granuloma which most commonly presents itself as an extensive ulceration involving the fornix and palpebral conjunctiva. In the early stages miliary tubercles may be seen, but these soon break down, run together, and form a conglomerate mass partially ulcerated, with outlying tubercles and thickened oedematous areas together with hypertrophic granulations. An ulcer of this description, hidden as it is in the loose folds of the conjunctiva, may only draw attention to its existence by a slight fullness of the lid, with watering of the eyes.

The preauricular gland is involved early. This ulceration of the conjunctiva is most frequently found in young people at or near the age of puberty. An absolute diagnosis of tuberculosis of the conjunctiva can only be made by bacteriological examination. Phlyctenular conjunctivitis is not tuberculous, but is probably due to tuberculous toxæmia. A chronic iritis, with few inflammatory symptoms and without an obvious etiological factor, should arouse suspicion of the tubercle bacillus being a possible cause of the condition. A typical case shows the presence of tubercles in the iris, generally on the anterior surface near the papillary or peripheral margin. Tuberculous iridocyclitis is usually chronic, with slight redness, slight pain, and slight watering of the eyes. The interference to sight is greater when the ciliary body is involved than in iritis alone. The tuberculosis of the choroid associated with tuberculous meningitis has been well known for years, but of late, in choroiditis of doubtful origin, laboratory tests have given positive reactions and tuberculin treatment has in some cases given good results. In tubercular keratitis the whole cornea is never involved. It is characterized by the denseness, whiteness and patchiness of the infected area in which the small islands of opaqueness appear. These generally are situated at the periphery, and are whiter than those due to syphilis; the surrounding cornea is perfectly clear.

It is possible for the lachrymal sac to be the site of a primary tuberculous invasion, but that is of rare occurrence, being more common secondary to infection of the nasal mucous membrane. In ocular tuberculosis, general treatment is of the greatest



importance. The large ulcers of the conjunctiva should be kept as clean as possible, the eyes being washed out three or four times a day with iodine water, the surface of the ulcer scraped, and iodoform powder dusted on. If the preauricular gland or supraparotid glands are softening, they should be opened and curetted. Tuberculin should be used, an injection of .0002 mg. being given every 10 to 14 days, the temperature being taken and the general effect and pain being noted after each injection. In iritis 1 per cent atropin and an iodine solution should also be used. Ormond has been pleased with the improvement in corneal opacities, the result of tubercular keratitis following the use of injections of air or oxygen under the conjunctiva. Before the advent of tuberculin treatment many surgeons maintained that intraocular tuberculosis necessitated removal of the eye. It is, however, rare for intraocular tuberculosis to be primary, and general dissemination rarely happens; many cases happily resolve under treatment. Excision is justifiable if the condition steadily grows worse under treatment and the general health is being undermined by the local condition. A shrunken phthisical eye should be removed, care being taken to prevent general dissemination of the bacilli present, which might follow the opening of the globe or the cutting into any caseous masses in the orbit. C. G. DARLING.

**Friedenberg: Visual Symptoms of Accessory Sinus Disease.** *Ophthalm.*, 1913, ix, 186.

By Surg., Gynec. & Obst.

Many symptoms of progressive sinusitis and almost all of the serious complications are ocular or orbital in character. On the other hand, careful special tests of visual function may establish a diagnosis of accessory sinus disease before nasal symptoms have become sufficiently marked to attract attention. In many cases the oculist is the first one consulted, and it is his responsibility to recognize the ocular symptoms characteristic of such infections. This is most important when actual nasal discharge is absent. A careful and thorough nasal examination should be made, as a superficial one may lead to an unwarranted sense of security.

From the oculist's standpoint, the most practical method would be to consider, in their order, first, local signs of inflammation, such as edema, disturbances of position or motility of the globe, local pain and tenderness; and then the functional disturbance of vision for form, light, and color, with their respective significance for diagnosis of accessory sinus disease. From the clinical and diagnostic point of view we must also consider the various types of sinus disease, and examine the sinuses separately for special symptomatology as indicated by ocular involvement characteristic of each. Among the more evident agencies, we have to deal with nerve irritation, either in the form of reflexes or from direct action of toxic substances, mechanical pressure, or hyperæmia from vascular involvement.

Among the superficial reflexes are lachrymation, clonic or tonic spasm, and fleeting oedema of the lids independent of inflammatory processes, transient conjunctival or scleral injection, and meiosis. Among the secretory neuroses noted are transient rise of intraocular tension, or a pronounced glaucoma disappearing promptly under nasal treatment. It is possible that vitreous dust and some lenticular opacities may be due to disturbed nutrition of the choroid dependent on long continued reflex irritation, although toxic factors play a more important part. Sensory neurosis causing fleeting or more or less continuous pain in and about the eyeball, radiating to the temple, brow and occiput, have been reported.

The symptom-complex of ostenopia is frequently found in long standing sinus disease. Disturbances of central vision and the field for white or color can hardly be explained on the basis of reflex irritation and give evidence of direct optic involvement. Motor disturbances manifesting themselves by limitation of ocular excursions are generally an indication of mechanical interference by dislocation of adjacent structures, such as bulging of a sinus wall, mucocoele, empyema, cellulitis or pus in the orbit. These conditions may also affect the optic nerve directly when the ophthalmoscope may show neuritis, choked disc and later atrophy. In optic nerve affections having their origin some distance behind the globe a retrobulbar neuritis is the rule. The commonest form of field defects are a central or paracentral scotoma, a ring scotoma, and irregular central defects, frequently without ophthalmoscopic findings. Another form of central defect which is pathognomonic of optic nerve affection based on accessory sinus suppuration is the enlargement of Mariotte's spot. This scotoma is a negative one. In a large series of cases of posterior sinus disease Van der Hoeve noted an invariable enlargement of the blind spot, while in anterior disease this symptom was missing. Central color scotoma was always a later symptom. The absolute size of the scotoma is not diagnostic.

C. G. DARLING.

**Attias: The Intrasceral Nerve Loops.** *Ann. Ophthalm.*, 1913, xxii, 73.

By Surg., Gynec. & Obst.

Attias has exhaustively examined serial sections of anterior halves of eyes for the purpose of studying the topography of nerves in this portion, and furnishes three additional cases of intrasceral nerve loops. Axenfeld first reported the peculiar course of a ciliary nerve that passed perpendicularly through the sclera, touched the conjunctiva, then formed a loop, passed back through the same canal, and finally spread out in the ciliary body. Very few cases have heretofore been published, and with the exception of Axenfeld's the writers do not state that they saw an anastomosis of the loops with other nerves, or a division of the loops during their course through the sclera. The author's sections allowed an exact examination of the large nerve branch which arose from the loop, extended through the



sclera and entered the cornea, acting thereafter like all other large corneal nerves. Two smaller loops, evidently much less numerous than the larger ones, were found to penetrate the sclera for a distance not greater than 100 micra. One was made up of all the fibers of the nerve; in the other, the central fibers ran straight by the opening, and only the outer bundles entered the scleral tissue. Neither of these two structures gave off a branch to the sclera, and but one was found near a small vein and artery. These loops are most often found under the superior rectus, but in one of two cases here reported they were situated under the insertion of the external rectus. Apparently Axenfeld described a case where the loop was seen inferiorly. The distance of these emissaria from the corneo-scleral junction varied from 1.7 mm. to 3.5 mm., and their direction was not always perpendicular to the surface, but often oblique.

The author believes he can conclude with great certainty that the fibers within the intrascleral portion are more tortuous and of somewhat smaller caliber than in their extrascleral course; that they are medullated throughout; that no ganglion cells can be demonstrated in the caps of the loops; that a small amount of connective tissue is present between the fibers, and that on account of the large branch given off in the one case the distal arm of the loop was thinner than the proximal. Attias does not give to the accompanying vessels the same importance that other observers have accorded them and does not believe, on account of their small size, that to them alone can be ascribed the origin of these loops. The simplest explanation of these would be that these ciliary nerves have grown too long for the bulb and necessarily have become bent. Thorough embryological investigations, too, are necessary to obtain certain explanations for the origin of these peculiar structures.

FRANCIS LANE.

**Sattler: Short Clinical Accounts with Microscopic Demonstrations of Two Cases of Tumor of the Optic Nerve.** *Arch. Ophthalm.*, 1913, xlii, 25. By Surg., Gynec. & Obst.

A fibrosarcoma of the optic nerve of slow growth, with almost unimpaired vision until 5 months before operation, increasing exophthalmos, with irritability of the eye from exposure yet with perfect mobility of the globe, made surgical interference a necessity. The tumor was removed, with resection of the outer wall of orbit (Krönlein), the globe preserved, and the lids closed with temporary sutures.

Five days later the eye was removed on account of involvement of the cornea. Sixteen months later the apex of the orbit was occupied by a dense, flattened, painless mass. There was also a slight prominence of the left eye. The patient reported two years after the operation that his health was good except for some loss of weight. The other case, in a boy aged four, was that of an intradural fibrosarcoma of the optic nerve, with rapidly advancing exophthalmos of the right eye. The condition had

been noticed by the parents for five months, and during the last month there had been an increasing irritability from exposure and insufficient lid protection. There was perfect mobility of the globe. A tumor was removed without resection of outer wall of the orbit, and an encapsulated, hard, egg-shaped mass, fully one inch long, was removed. An attempt was made to save the globe, but it became necessary seven days later to enucleate it. Fourteen months later patient was reported in good health.

C. G. DARLING.

**Dor: The New Antiglaucomatous Operations.** *J. Ophthalm.*, 1913, ix, 195. By Surg., Gynec. & Obst.

The first operation for combating glaucoma was the equatorial sclerotomy of Guérin, now known as posterior sclerotomy and considered an operation of urgency, permitting the crisis of acute glaucoma to be passed without the vision being definitely compromised.

Iridectomy (applied by von Graefe) was used and advocated for thirty years, until the desire for better results brought out the idea of creating a filtrating cicatrix. Attempts to obtain this were made by incarcerating the iris or a conjunctival flap; and by a subconjunctival shutter (Harman). Cyclodialysis (Heine) is an attempt to obtain infiltration into the subchoroidal spaces and seems especially recommended in cases where the anterior chamber has disappeared, where the tension is very much increased, cases complicated with luxation of the lens, hæmorrhagic glaucoma, hydrophthalmia, in cases where iridectomy has failed, and in glaucoma following cataract operation. Cyclodialysis has an important literature of its own.

Subconjunctival fistula at the limbus was proposed by LaGrange (sclerectomy) and modified in several ways by others. Trephine (Elliot) is largely used. These operations are done either with or without an iridectomy.

The author advises keeping in mind posterior or equatorial sclerotomy and using it in emergency, especially in post-operative acute glaucoma, or as a preparatory operation.

EARLE B. FOWLER.

**Grunert: The Operative Treatment of Keratokonius.** *Ophthalm.*, 1913, ix, 163.

By Surg., Gynec. & Obst.

Grunert treated 11 eyes in 8 patients by his method of operation. He believes Elsching's method has the correct principle, but does not go far enough.

His operation is done in three stages. First, using an electrode with a flat tip and beginning at the upper limbus, he cauterizes for 20 to 30 mm., the burn reaching into the parenchyma. Then, with the finest wire tip, this line is extended into an equilateral triangle, one corner being continued as a fine line to the center of the cone.

Two days later, under general narcosis, the slough is scraped off, and the cornea is split along the middle line from the center to the limbus. The central



meridian of the cornea is then covered with a conjunctival bridge after Kuhnt's method. Four weeks later the flap is transplanted back. After the second stage of the operation the patient remains in bed 6 to 8 days, eserine or pilocarpin being used at each dressing. When the sutures do not cut spontaneously they are removed on the sixth day. Only after repeated and lasting subjective examination can one find the cylindrical correction which should be worn.

C. G. DARLING.

**Roy: Syphilis of the Eye.** *South. M. J.*, 1913, vi, 13.  
By Surg., Gynec. & Obst.

The importance of syphilis in ophthalmology cannot be overestimated. Many obscure lesions connected with the eye where there was absolutely no history of syphilis have been permanently cured by the use of antisyphilitic remedies. If it were not for the so-called "venereal diseases," the work of the ophthalmologist would be lessened at least one half, if not two thirds.

There are two forms of syphilis of the eye: (a) acquired and (b) hereditary. In the acquired forms we have the initial lesion around the eyelids as a possible location. In the secondary stages we have various manifestations:

1. Lids. Thickening of the tarsal cartilages, with marginal ulcerations.
2. Cornea. Diffused keratitis, and especially ulcers, are most frequently seen. Negroes especially are liable to this condition. Unless treated vigorously, such lesions are very destructive. Acquired interstitial keratitis is rare, but does occur.
3. Iris. Iritis with a syphilitic etiology is well known. It is the cause in nearly eight tenths of these cases. It manifests itself from the simplest forms to the most destructive.
4. Intraocular. Choroiditis with vitreous opacities and retinal hemorrhages—these and many other conditions are manifestations of syphilis. Many cataracts are the result of syphilis caused by nutritive disturbances.
5. The optic nerve is not infrequently involved, and many atrophies of this structure, if not the large majority, are probably syphilitic.
6. Extrinsic muscles of the eye. Paralysis of the sixth and third nerve are by no means infrequent, and practically all have a syphilitic etiology.
7. The orbit and its adnexa sometimes show various syphilitic lesions.

In the hereditary syphilis the eye manifestations are also varied. Congenital opacities of the cornea, staphylomata, occluded pupil, various forms of polar cataracts, hydrops oculi, these and many others are congenital syphilitic manifestations.

The author puts more confidence in the mercury and iodides than he does in the salvarsan injections.

**Samuels: Peribulbar Implantation Cyst after Removal of Staphyloma of Cornea.** *Arch. Ophthalm.*, 1913, xlii, 12.  
By Surg., Gynec. & Obst.

Three years after the excision of an anterior staphyloma, a cyst which completely surrounded an atrophic bulb more than filled out the space normal-

ly occupied by the eyeball. The staphyloma involved three fourths of the normal corneal area and was accompanied with severe conjunctivitis, ciliary injection, and traumatic ulcer.

For the removal of the staphyloma the conjunctiva was freed at the limbus, the recti tenotomized, the cicatrix then excised, the free edges of the sclera sutured, the tendons fastened over the closed sclera, and lastly the conjunctiva sutured over the wound. The cyst with the shrunken bulb attached to its inner posterior surface was dissected out and examined microscopically.

The wall consisted of dense connective tissue lined throughout with stratified epithelium without a basement membrane. This epithelial lining spread completely over the scleral wall of the enclosed eyeball, which latter showed the characteristic findings of atrophy bulbi, so that no communication existed between the cyst cavity and the interior of the bulb.

The clear limpid fluid contained broken down cells.

Only four analogous cases have been recorded and all followed the excision of anterior staphyloma. In three, the cysts were only epibulbar and differed further from this case in that communication occurred through the unclosed sclera into the interior of the eye. The remaining case was epibulbar without extension into the eye.

The author's case is the most extensive on record, since it involved the whole of Tenon's space. The cause for such formation has been attributed to an invagination of conjunctiva by sutures, an ingrowing of epithelium during the process of healing, or to implantation of fragments of epithelium under the sutured conjunctiva.

Careful suturing of all conjunctival wounds is recommended as the most probable preventative of such occurrences.

JOHN B. ELLIS.

## EAR

**Coates: Bismuth Paste in the Ear and Nose.** *N. Y. M. J.*, 1913, xciv, 112.

By Surg., Gynec. & Obst.

Without going into the use of Beck's bismuth paste in its application to general surgery, the author confines himself to his experience with it in ear and nose conditions. In his experience, its greatest value for the aurist is to promote quick healing in post-operative sinuses such as follow the simple mastoid operation where the blood-clot dressing is not used. In these cases it is found that the time of convalescence is very materially shortened, and the patient is relieved of the discomfort of prolonged packing. The paste dressing is not applied until the middle ear entirely or almost ceases to discharge. One or two injections of the sinus usually suffice to permanently close the wound. In cases where the radical mastoid operation has been performed and where dermatization is delayed, the paste dressing lessens discharge and promotes healthy granulation.



The simple technique is described and Beck's different formulæ given.

**Hays: Four Cases of Subperiosteal Abscess in Adults Complicated by Perisinus Abscess; Operation; Recovery.** *Am. J. Surg.*, 1913, xxvii, 28.  
By Surg., Gynec. & Obst.

Each of these cases suffered from trouble with the ear for at least six weeks, and although extensive destruction had taken place the operative recovery was rapid and uneventful. The condition is more common in adults than is generally supposed. The chief interesting feature of the cases was the long duration of the trouble with apparently little pain. The mastoid is usually almost entirely destroyed by pus, but, the drainage from the middle ear being free, little pain is experienced. The lesson to be drawn from these cases is that there are many cases of acute mastoiditis which apparently subside and leave no indication except a continuous discharge of thick pus. Suddenly a swelling of the canal and the tissues over the mastoid is seen, indicating the presence of an abscess. One should be careful not to prognosticate too early, for what is apparently a condition that is getting better is actually a condition that is getting worse.

**Milligan: Treatment of Meningitis of Otitic Origin.** *Lancet*, Lond., 1913, cxxxiv, 226.  
By Surg., Gynec. & Obst.

Milligan finds it most convenient to classify leptomeningitis into simply serous and purulent, disregarding more elaborate classifications. During the serous stage, and while the disease is still localized, it is a fit condition for operative treatment. When the text-book symptoms of meningitis have developed, recovery is nearly impossible. Hence in suspected cases Milligan is guided by examination of the spinal fluid. An increasing acid content, increased albumin, and the absence of Fehling's reaction, he regards as very sure indications of the progress of purulency. A fluid not acid, even though turbid, gives hope of a favorable outcome of operation. He lays less stress on turbidity, cell count or negative bacteriologic findings.

In addition to oedema of the optic papilla, as an early sign, he has found a lowering of the upper tone limit in the sound ear, probably due to the same mechanism as the optic neuritis.

As to treatment, he regards all cases not considered purulent as operative. Operation should be done early. Lumbar puncture or continuous spinal drainage he regards as inferior to a decompression of the skull with drainage, always in addition to the removal of the original focus. If the labyrinth is the primary focus, its complete removal, with drainage, is advised. Usually he performs an occipital decompression in order to avoid infecting the cerebro-spinal fluid. The internal ear is in Milligan's opinion the most frequent avenue of infection and the most dangerous, because it leads to direct infection of the posterior fossa. "Tym-

panic" infections are more localized and less difficult of access. In the former a complete labyrinthectomy in addition to a complete post-aural operation should be performed. Any pathological tract leading into the cranium should be followed and free drainage provided by removal of as much surrounding bone as may be necessary.

In spreading meningitis, the difficulties of treatment are greatly increased. The objects of operation are (1) relief of intracranial pressure with the resultant starvation of the tissues, (2) the establishment of free drainage from the meninges, and (3) the overcoming of the existing toxæmia. Accordingly, in addition to the opening of the skull, Milligan splits freely or excises the dura. He is in favor of Haynes' method of decompression in spite of his own somewhat unfavorable results, due to the nature of the cases. This method drains the cisterna magna through the cerebello-medullary angle, thus doing away with troublesome herniation and draining the natural reservoir of pus.

Milligan's records show 37 cases of serous meningitis, so-called, with 29 recoveries. Of the 8 fatal cases, the cerebro-spinal fluid became definitely purulent in all.

Of the cases diagnosed purulent meningitis before operation, there were 14. Four cases seemed hopeless before operation and died. Of the remaining 10, where there was a chance of recovery, 6 died, and 4 (or 40 per cent) lived.

CARL FISHER.

**Milligan: Tuberculous Disease of the Ear.** *Practitioner*, 1913, xc, 248. By Surg., Gynec. & Obst.

Tuberculous disease may attack the external, middle, or internal ear, and may be a primary or secondary infection.

Temporal bone tuberculosis, which is usually secondary to tuberculous disease of the middle ear cleft, leads to tuberculous infection of the meninges and intracranial abscess. These infections are usually of septic origin.

Tuberculous disease of the external ear is rare. Lupus vulgaris is the common form met with in children and young adults. The nodules break down, form ulcers with indented edges, and spread superficially. Lupus hypertrophicus is characterized by excessive granulation tissue. Lupus erythematosus attacks the auricle with a symmetric appearance. For treatment, each nodule should be destroyed by cautery or strong caustic.

Tuberculous disease of the middle ear is primary or secondary. Primary in infants and children attacks the petromastoid and mucosa. The channels are (1) aerial, (2) lymphatic, (3) vascular, and (4) lymphoid tissue along the Eustachian tube. Secondary infection of the middle ear is found amongst those suffering from advanced phthisis, as tuberculous disease of the larynx, pharynx, etc. The pathology is the characteristic tubercle with multiplication of epithelioid cells. Symptoms are rapid inanition, night sweats, diarrhœa and atypical



pulse; locally, those of acute otitis media, with or without pain. The membrane tympani appears pale, flabby and cedematous and may have one or more perforations. Enlarged glands and facial paresis are frequent signs. Tuberculosis of the internal ear is usually secondary to middle ear disease and as a rule by way of fenestra ovalis. The static and acoustic segments are early affected, and a search for the tubercle bacillus should be made to clinch the diagnosis.

For treatment there are two classes: (1) The inoperable, infants in poor health; and (2) the operable, where disease is primary and within the limits of surgical intervention.

WM. H. THEOBOLD.

**Turner and Fraser: Otosclerosis.** *Edinb. M. J.*, 1913, 7, 71. By Surg., Gynec. & Obst.

The authors discuss the subject of otosclerosis, especially from the anatomical and pathological standpoint, emphasizing the fact that normally the membranous labyrinth is surrounded by two distinct layers of bone. The inner layer, the labyrinth capsule proper, is derived from the cartilaginous otic capsule of the embryo; the outer, surrounding this cartilaginous bone, is formed from the deep layer of the tympanic mucoperiosteum of the petrous bone.

"Otosclerosis is characterized by changes in the structure of the bone surrounding the labyrinth, leading in most cases to ankylosis of the stapes. Portions of normal bone, especially around the oval and round windows, are affected and replaced by spongy ostioid tissue, which later becomes destroyed. This process is supposed to advance along the blood-vessels. In some cases there is even degeneration of the nervous structure of the labyrinth. All writers are agreed that the bony changes are inflammatory, but as to the primary site of the onset there is much disagreement."

The disease, from an etiological standpoint, is said to be a local manifestation of general toxic conditions. Bezold found heredity a factor in 52 per cent of cases. Hammerschlag includes progressive nerve deafness and hereditary deafmutism under this same head. Ferreri considers the condition to be a latent auto-intoxication of rachitic or osteomalacic origin.

The symptoms and functional examination are taken up briefly, and under the heading of diagnosis the condition is summed up as follows: 1. Gradual onset of progressive deafness and tinnitus. 2. History of hereditary deafness in the family. 3. Patient hears better in a noisy place. 4. The tympanic membrane is normal. 5. A red shimmer from the promontory may be seen through the membrane. 6. The Eustachian tube is patent. 7. Loss of the lower tones. 8. Lengthened bone conduction. 9. Bone conduction for medium tones better than air. 10. Gelle's test is negative. 11. The upper tone limit is normal.

As far as recovery is concerned, treatment is useless; the patients are encouraged to learn lip-reading while the hearing is still useful.

EUGENE CARY.

**Holmes: The Value of the Blood Clot in Operations for Acute and Chronic Mastoiditis.** *Lancet-Clinic*, 1913, cix, 64. By Surg., Gynec. & Obst.

The credit of this method belongs to Clarence J. Blake of Boston. The percentage of successes is so great that it is the method par excellence, especially in chronic cases. Added to this are other distinct advantages: after treatments are devoid of pain; the period of convalescence is shortened; disfigurement is avoided; and better results in hearing are obtained.

The success of the blood clot method depends primarily upon eliminating as nearly as possible all infective matter, and secondly upon the bactericidal properties of the blood. It has been proven that clotted blood has greater bactericidal power than circulating blood. Even if the clot should break down, the bony cavity has great osteoplastic activity and small granulomata begin to form within 48 hours; these finally form a glistening lining membrane in the cavity.

At the completion of the operation the wound is syringed forcibly with peroxide, and some is injected into the Eustachian tube. Then the cavity is filled with peroxide for 4 minutes, fresh solution being added from time to time as it oxidizes. Following this the process is repeated with alcohol (95 per cent), exercising the same thoroughness. Finally, to neutralize the alcohol the cavity is flushed with a saturated solution of bicarbonate of soda; this is allowed to remain an equal length of time.

A supply of fresh arterial blood is now secured from the post-auricular artery and the cavity filled therewith. The external canal is converted into flaps according to the Neumann method. The periosteum is carefully sutured with catgut, bridging across the cavity perfectly; overlying this is the external flap, which is closed by metal clamps. No drain of any kind is used. To prevent the dressing from soaking the blood out of the canal, the auricle is covered by a piece of gauze saturated with petrolatum. After 48 hours the bandage and clamps are removed.

Fifty cases were reported: 17 acute, with 41 per cent of perfect results, i. e. the blood clot not breaking down; and 33 chronic cases, with 82 per cent of perfect results. "In the acute and chronic cases, with partial breaking down of the clot, the upper three fourths of the scar always held perfectly, and the osteoplastic activity created by the blood clot during the 48 to 72 hours prior to the beginning of the partial breaking down had in this short time laid the foundation for the new lining membrane, thereby favoring much more rapid healing than would otherwise have taken place."



# SURGERY OF THE NOSE, THROAT, AND MOUTH

**Skilern: Anomalous Internal Carotid Artery and Its Clinical Significance in Operations on Tonsils.** *J. Am. M. Ass.*, 1913, lx, 172.

By Surg., Gynec. & Obst.

In view of the increasing number of operations on tonsils, and because of the popularity of complete ablation in preference to partial tonsillectomy, the author describes the following specimen:

Left side of skull containing internal carotid artery in situ and dissected free from surrounding tissues; uniform caliber; walls neither thick nor calcareous.

From skull and extending two-thirds of distance of bifurcation of common carotid, an S-shaped tortuosity bends not greater than 1 cm. from normal axis of artery, bringing artery in closer relation to left tonsil. Right internal carotid was normal. Other examples described (Wood): a girl aged five, and a boy aged seven. Right side of pharynx projected almost to median line; pulsating vessel size of lead pencil extended from below upward and inward to point opposite uvula then slightly outward and downward. Several similar cases are described, in one of which there was a pulsation of posterior palatine pillar, with large vessel immediately behind, and an audible systolic bruit. This anomaly is more frequent in women than men. Demme saw, in 10,000 patients, pulsation of pharyngeal wall in 2 per cent.

Conclusions drawn by author: Before all operations on the pharynx, make thorough ocular and digital examination for pulsations. If operation is indicated in presence of this anomaly, ligature of internal carotid opposite upper border of thyroid cartilage. If doubtful whether anomalous artery is internal carotid or ascending pharyngeal, occlude common carotid at same situation with a Matas clip. If artery damaged during operation, control by compressing common carotid against Chassaignac's tubercle, followed by ligation.

F. C. WINTERS.

**Marshall: Correction of Nasal Deformities, Particularly External Lateral Deflections and Depressions, with Obstructing Deviations of the Septum.** *J. Am. M. Ass.*, 1913, lx, 179.

By Surg., Gynec. & Obst.

Marshall confines his paper to disfiguring deformities only, most of which are combined with serious nasal obstruction. He has operated 33 cases of this type, with infection in two cases delaying healing about two weeks. He describes a technique which he devised seven years ago, the essential feature being to cut through the nasal process of the superior maxillary bone, avoiding injury

to the lachrymal duct. Incision is made directly over the nasal process of the superior maxillary bone at the point where the elevation which makes the nasal prominence begins. The incision is made parallel with the normal line of the nose and is about 0.25 cm. long. Pressure is made at the point with a beveled chisel which penetrates the nasal process, great care being observed not to go beyond the bone. Without enlarging the skin incision, the chisel may cut the bone as far as desired. After withdrawal of the chisel, pressure is again instituted by an assistant while the operation proceeds in a like manner on the opposite side. Then, by means of a long-handled broad-bladed forceps such as the Ashe septal forceps, with one blade in the nasal passage and one outside, the mobility of the nasal process is completed by fracture.

The upper part of the nasal process can usually be made mobile at the sutures between the lachrymal and the nasal bones on either side. If there is nasal obstruction through malposition of the septum, the septum is seized with the same forceps and forced into position by loosening its articulations with the septum without separating them. The nose is not likely yet to be in a straight line, the defect lying at the suture between the frontal and the upper extremities of the two nasal bones and both processes of the superior maxillary bones. This can be corrected by a sharp stroke with the mallet at the point guarded by a rubber-covered lead plate, the force being directed downward from the frontal bone and toward the deflected side. Elevation can be assisted with a large urethral sound. If pressure has been kept on the point of incision for a few minutes there should be no extravasation of blood, and the wound will heal by first intention. The incisions are covered with iodoform gauze and collodion. The lower part of the external nose is incased with a collodion dressing.

L. G. DWAN.

**Kaempper: Suspension Laryngoscopy.** *N. Y. M. J.*, 1913, xcvi, 21.

By Surg., Gynec. & Obst.

The recently introduced suspension laryngoscopy of Killian bids fair to be as great an advance over direct laryngoscopy as that was over the older indirect method.

The instrument consists of a sort of gallows, fastened near one end of the table, from which the patient's head is suspended by a hook, while a spatula holds back the epiglottis and depresses the tongue into the floor of the mouth. When in position, the head is free of the end of the table and an extended view of the entire larynx and pharynx can be obtained.



Twenty per cent cocaine with a few drops of adrenalin is the anæsthetic employed. Morphine-scopolamin is recommended for patients not tolerant under cocaine. At times a general anæsthetic is required. In children under sixteen cocaine or morphine-scopolamin should not be used.

In the introduction of the instrument the tongue is drawn out as far as the edge of the teeth. The spatula is passed along the tongue until it touches the posterior pharyngeal wall. It is then raised until the epiglottis is engaged and a view of the larynx obtained. The hook is then suspended from the gallows and the head allowed to hang by its own weight.

The advantages that this method has over the older methods are: that it allows the operator the use of both hands; it brings the larynx so near that manifestations are permitted which are impossible with any other method of approach, and blood and secretions, tending as they do to flow toward the roof of the pharynx, can readily be wiped away. There are no contraindications. The difficulties and dangers are those encountered in direct laryngoscopy and bronchoscopy.

Some fifty cases were reported by Killian in his original paper. They fall mainly into two groups — laryngeal tuberculosis and papillomatous growths. In the former class of cases the larynx was thoroughly curetted and the tubercular granulations removed at one sitting, and in only a few instances was a second operation required. The papillomata occurred mainly in children. There were no untoward symptoms resulting from the suspension in any of the reported cases.

#### Pettit: Incipient Tuberculosis of the Larynx.

*N. Y. M. J.*, 1913, xcvi, 122.

By Surg., Gynec. & Obst.

The most frequent site of laryngeal tuberculosis is the posterior end of the vocal cord and the interarytenoid space. The first sign of its presence on the posterior wall is a diffuse or circumscribed thickening, and we find small nodules, a well-defined infiltration, or a cone-shaped tumor projecting into the lumen of the glottis. Ulceration may start as such or be the result of caseation or fatty degeneration of an infiltrate.

Usually the appearance of the lesion is distinctive, and as a rule a thickened pachydermatous patch in the interarytenoid space is likely to be tuberculous; if there are demonstrable lesions in the lungs, it is tuberculous. A beginning gumma causes more inflammatory reaction, and is usually in the posterior part of the false cord. A beginning carcinoma is usually in the anterior part of the larynx, and the disturbance of motility of the cord is out of all proportion to the apparent size of the lesion. The tuberculous ulcer is characteristic. Its edges are thin, irregular, undermined, and have a peculiar, nibbled look; its floor is nodular.

The submucous cauterization consists in the

application of a specially constructed electrode near the demarcation of diseased and healthy tissue, but far enough away from the latter so that the heat necrosis will just reach it. Pressure is applied until the tip of the electrode has sunk into the tissues to a depth corresponding to the vertical extent of the lesion. When the whitened cauterized area has reached the normal tissue the current is turned off and the instrument with due care is withdrawn. Healing takes place either by the sloughing off of the cauterized area or it becomes converted into a mass of dense connective tissue.

#### Weatherbee: The Operative Treatment of Cleft Palate.

*Canad. M. Ass. J.*, 1912, iii, 25.

By Surg., Gynec. & Obst.

The history of cleft palate operations is reviewed. Until 1868 the earliest age for operation was fifteen years. At present all surgeons are agreed that operation should be performed under three years of age. The exact time is still in dispute, but there is a tendency to the earlier operation.

There are three methods now followed for closing the cleft palate, viz.: Brophy's, the flap operation of Davies-Colley as modified by Arbuthnot Lane, and Langenbeck's, sometimes spoken of as the median operation.

In Brophy's operation, the age of the patient should be between ten days and three weeks. The operation consists in thrusting the two superior maxillary bones together, holding them with wires and lead plates, and then adjusting with sutures the newly pared edges of the cleft. The soft palate is united at about the age of sixteen months. Brophy also advises closure of the lip two months after the first operation.

The turnover flap method of Lane is done as soon after birth as possible. The principle underlying the various methods is to close the cleft by mucoperiosteum in the case of the hard palate and by mucous membrane and submucous tissue in the case of the soft palate. The harelip should be closed at the same time.

Langenbeck's operation is carried out between the ages of one and three years, according to the extent of the cleft. The operation consists in detachment of the mucoperiosteal tissues from the oral surface of the bony palate, detachment of the soft palate from the posterior edge of the palate bones, paring the margins of the cleft, suturing the pared edges, and making, if necessary, lateral incisions to relieve tension.

In any method, the mouth should be in good condition and the general health should be good. The anæsthetic should be chloroform. The after treatment and the late after treatment are very important, especially training in speech. The treatment by obturators is not satisfactory.

The author concludes that as yet the evidence is not sufficiently strong to convince one as to which is the best method of operation. FLOYD RILEY.



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# INTERNATIONAL ABSTRACT OF SURGERY

JUNE, 1913

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### ANÆSTHETICS

**Kisch: Ether-Drop Anæsthesia After Preceding Injection of Pantopon-Atropine-Sulphuric Acid** (Über Äthertropfnarkosen nach vorheriger Injektion von Pantopon-Atropinschwefelsäure). *München. med. Wchnschr.*, 1913, lx, 352.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Preceding 300 ether anæsthesias pantopon (0.02) and atropine-sulphuric acid (0.001) was given hypodermically instead of morphine (0.01). Immediately it was found that certain disadvantageous pharmacological properties of morphine, such as decrease of pulse rate, slowing of respiration, intestinal atony, vomiting, and bronchitis, occurred either not at all or less frequently. The essential factor, the prevention of the stage of excitation during anæsthesia and thereby a decrease in the amount of ether used, was obtained with pantopon just as well as with morphine. The time of giving the injection is important. Pantopon acts best if it is administered exactly one half hour before anæsthesia is started. In a series of 50 cases the stage of excitation was eliminated 49 times and occurred in a mild degree only once. If narcosis was induced earlier or later than one half hour after injection of pantopon it did not show such a favorable course. If the anæsthetic was given immediately after the injection, the stage of excitation was not even eliminated in one half the cases. Atropine-sulphuric acid is preferable to atropine sulphate, also half as poisonous, containing 10 per cent less atropine, yet it is equally active in the suppression of salivation. It acts most safely and intensively if given 30 minutes before the ether, the same as pantopon. An ampule containing pantopon 0.02 and atropine-sulphuric acid 0.001 is on the market.

ADOLPH.

**Luke: A Case of Extensive Subcutaneous Emphysema Following Intratracheal Anæsthesia, with Recovery.** *Surg., Gynec. & Obst.*, 1913, xvi, 204.  
By Surg., Gynec. & Obst.

Kate S., age 36, was operated upon under intratracheal anæsthesia for tumor of the cerebellum. Intubation was easily accomplished, and the patient was placed in a complete prone position, with head over the end of the table and strongly flexed. From the beginning there seemed to be some obstruction to the air current, and occasional moderate cyanosis developed. The draping was too elaborate for good observation of the patient. After about 35 minutes a severe cyanosis developed, and the face and neck were noted to be badly swollen. This swelling also extended down the anterior and posterior chest, all of which gave the characteristic crackle of subcutaneous emphysema.

The patient appeared moribund. The tube was immediately removed, and with artificial respiration there was improvement enough to complete a decompression. Most of the emphysema disappeared during the next few days. There were no pulmonary complications, and sixteen days later a second operation was performed with pharyngeal insufflation anæsthesia. Death occurred five days later from traumatic cerebritis. No autopsy was obtained. The accident may have been due to trauma from the catheter, or excessive pressure of the sand bags beneath the neck. Overdistention from inserting the catheter too far and plugging tightly a bronchus seemed very possible; No. 24 Fr. was used. The machine was not provided with an efficient safety valve to prevent excessive pressure in the lungs, and this is absolutely essential.



**Graef: Methods of Using Intravenous Ether and Isopral Anæsthesia** (Bericht über Erfahrungen mit den intravenösen Äther und Isopral-Äther-Narkosen). *Beitr. z. klin. Chir.*, 1913, lxxxiii, 173.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

During the last 2½ years 510 intravenous (151 ether and isopral ether) anæsthetics were given at the surgical division of the city hospital in Nürnberg without a single fatality. The cases operated were: some on the head and neck, on anæmic and cachectic individuals; peritonitis and diseases of the respiratory organs; hernias; and various gynecological operations. Contra-indications are the following: myocarditis, marked arteriosclerosis, nephritis, marked icterus, cholæmia, plethora. In the pure ether narcosis there were 11 instances of a stage of marked excitation, thirty of light excitation. The amount tolerated was usually 250 to 400 cm. of a 5 per cent solution in about five minutes. In a few cases as much as 1,800 to 2,000 cm. were given without any injurious after-effects. It can be combined with salt solution, digalen or adrenalin. Hemoglobinuria can be avoided as a complication by shaking the ether solution well before using and using it freshly prepared. Solutions stronger than 5 per cent produce hemoglobinuria. The danger of thrombosis is very slight. The after-effects are so slight that the patients preferred to be anæsthetized "through the arm." The lowering of temperature was at most only 0.5 to 0.7°, and the change in blood pressure insignificant. While the pure ether does not often produce a lasting deep narcosis, the combination with isopral satisfies all demands. More than 200 cm. of the solution (= 3g. isopral) was not needed to avoid the excitement stage. The strongest patient could be put into deep sleep by this method. As a rule, the tolerance for isopral solution was 120 to 150 cm. in 3 to 5 minutes. Excitation rarely was produced. Occasional thrombosis disappeared rapidly. Kidney injuries were only transitory. An instrument made by Walb-Nürnberg with three glass vessels, containing the following, was used: (1) 500 cm. of 1.5 per cent isopral sol., (2) 2,000 cm. of 5 per cent ether mixture, and (3) 1,000 cm. Ringer sol. After the cannula has been inserted in the vein under local anæsthesia and with aseptic precautions, the isopral solution is allowed to run into the vein (not more than 50 cc. per min.). Then the ether solution is injected (about 70 cm. per min.). Finally the vein is flushed out with 50 to 100 cm. of Ringer's solution. Strict asepsis, sterile solutions, slow injection are *conditio sine qua non*. The article ends with a summary of the cases, giving the important points. EBELER.

**Honan and Hassler: Experiences with Intravenous Anæsthesia.** *Surg., Gynec. & Obst.*, 1913, xvi, 206.  
By Surg., Gynec. & Obst.

In a preliminary report of 51 cases of general anæsthesia by the intravenous route, the authors have used ether, hedonal, and a mixture of ether and paraldehyde. In none of the cases was there a fatal-

ity or an untoward symptom worthy of consideration. The operations embraced laparotomies for various abdominal and pelvic conditions, herniotomies, arthroplasties, amputations, joint resections, bone plating, thyroidotomies, as well as many minor cases. By this method, anæsthesia is rapidly induced, the breathing is natural, color remains good, flexibility and muscular relaxation are absolutely satisfactory to the operator. They claim for this method that the points and areas of noci-association are anæsthetized and a condition apparently similar, if not identical, to the anoci-association of Crile is obtained. The pulse remains stable and at a low level throughout a protracted operation; the awakening of the patient is prompt and with clear mentality; there is absolute absence of nausea and vomiting, and the convalescence is remarkably rapid and satisfactory.

It is particularly urged that strict attention be paid to details of technique to insure satisfactory results. For the intravenous use of ether, the patient is given morph. sulph. gr. ½, scopolamine gr. ⅙, atropine sulph. gr. ⅙, subcutaneously, about forty minutes before the operation. A 5 to 7 per cent solution of ether is poured into a reservoir of 2000 cc. capacity, which is adjusted on a stand 8 feet above the floor level, at which point it remains during the entire administration. The fluid flows through a bulb which contains a pipette such as is used in Murphy's proctoclysis apparatus, then into a tube ending in a small blunt cannula. When the apparatus is working properly the lower half of the indicator is filled with fluid while the upper half contains air. The solution flows from the tank through the pipette and drops on the surface of the fluid in the lower half of the indicator. By means of a compression tap placed below the indicator the rate of flow can be accurately controlled, and if the fluid be kept at a proper level in the bulb a satisfactory index is furnished as to the rate at which the solution enters the vein. As ether boils at 98.6° F., it is absolutely essential that the solution be at all times much lower than that point. Much satisfaction has resulted, and no harm, from using fluid at temperature of 85° F. A convenient vein is selected in the arm or leg and the cannula introduced and tied with a ligature, applying the technique such as would be employed in intravenous saline infusion for shock or collapse. The solution is administered at a full flow at the beginning, the anæsthetist reducing the stream on the appearance of the usual signs of surgical anæsthesia. The flow should be continuous, and can usually be reduced to 30 or 40 drops per minute after the anæsthesia has lasted half an hour. It is quite incumbent that the anæsthetist take unusual precautions to maintain a free air way, as the drug employed is promptly exhaled, and good anæsthesia of any variety depends upon the prompt and proper removal of the carbonic acid equivalent from the tissues; also the medullary centers will be depressed by asphyxial blood. The degree of narcosis can be quickly and easily regu-



lated by the anæsthetist, the corneal reflex and the character of the breathing furnishing the necessary information. Hedonal (methyl-propyl-carbinol urethane) has also been used in the same manner, except that there is no preliminary hypodermic medication. It is a stable substance, does not depress the action of the heart, may be sterilized by boiling, and can be administered at any convenient temperature. It is used in normal saline in a strength of 0.75 per cent solution. Greater caution is necessary with hedonal than with ether, as the effect is much quicker, and temporary respiratory arrest may follow if the stream is not promptly reduced on the appearance of signs of deep anæsthesia. The narcosis under hedonal is much like normal sleep, very quiet and without stertor; blood pressure falls with the use of hedonal and rises somewhat with ether, and this fact suggests the intravenous use of hedonal in an isotonic glucose solution in puerperal eclampsia. The convulsions would in all probability be entirely controlled by the hedonal, while the dilution and elimination of the toxins by the infused solution certainly seems quite possible; this proposition opens a field in speculative therapeutics that might prove of great value. A mixture of ether 3 to 5 per cent and paraldehyde 3 per cent has produced very satisfactory anæsthesia, though a 5 per cent mixture of paraldehyde alone, in saline solution, showed marked crenation of blood cells with occasional pigmental spots in the cell body. As paraldehyde is somewhat irritating to the larynx, the stronger solutions sometimes produce a slight laryngeal spasm toward the end of a protracted operation. The time required to produce complete anæsthesia ranges from 1½ to 23 minutes with ether, while with hedonal the effect is accomplished in from twelve seconds to four minutes. If hedonal is used for operations lasting over an hour the patient may sleep 12 to 14 hours after the operation; this, however, does not seem to be a disadvantage, but, as in all forms of narcosis, much depends upon the skill and experience of the anæsthetist.

**Kasashima: Pantopon-Scopolamine Narcosis**  
(Über Pantopon-Scopolamindämmerschlaf). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 90.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports on two series of gynecological operations—in the one morphine-scopolamine, in the other pantopon-scopolamine were used. In all cases lumbar anæsthesia was used in combination with the narcosis. The pantopon-scopolamine series was more satisfactory since the anæsthesia was disturbed only half as often and pain and abdominal contractions were less frequent. Although post-operative headache was present in both series, the pantopon cases developed less vomiting and less bronchitis. Two cases of pleuritis and one of pneumonia developed in the second week, but were not due to the pantopon. There was no death and the one case of post-operative collapse was charged, by exclusion, to the pantopon.

The technique of pantopon-scopolamine narcosis is very simple. One and one half hours before the operation 0.02 pantopon and 0.0003 scopolamine are injected hypodermically. In an hour this is repeated. Ten minutes before the operation the lumbar anæsthetic (0.08 to 0.16 novocaine in 0.15 cc. 1 per cent adrenalin solution is injected. Only fresh chemicals are used. In the introduction of the report is a résumé of pantopon experiments.

ADOLPH.

**Diwawin: Pantopon-Scopolamine Injections in Combination with Local Anæsthesia** (Über Pantopon-Scopolamin Injectionen bei Operationen mit lokaler Anæsthesie). *Zentralbl. f. Chir.*, 1912, No. 51, 1729.  
By Surg., Gynec. & Obst.

Complete consciousness during extensive operations under local anæsthesia is at times annoying. To avoid this Diwawin proceeds as follows: The patient receives 0.5 of medinal on the evening before the operation to procure a quiet sleep. The following morning 1½ to 2 hours before the operation a hypodermic injection of 0.04 pantopon and 0.0004 scopolamine is given to strong men and 0.02 pantopon combined with 0.0002 scopolamine to women and weaker individuals. This produces a light sleep from which the patient may be aroused. In alcoholics the foregoing dosage usually does not produce this sleep. Injection of the local anæsthetic-novocaine suprarenin (1 per cent) is frequently not felt at all. Before opening the peritoneum a 10 per cent novocaine solution is applied, making the incision through this membrane painless. The severing of adhesions and pulling upon the mesentery of the appendix during ligation is felt by some as a dull pain. Ligation and still more cutting of the hernial sac caused pain in some patients. Others complained of no sensations whatsoever, in fact were asleep during the operation. Suture of the peritoneum, muscles and skin was usually painless. The patients sleep as a rule for 2 or 3 hours after the operation to awaken then and subsequently to fall asleep again for a longer time. None complained of pain in the wound, but all noticed a feeling of dryness in the mouth, and thirst. Vomiting with the above doses was absent. It did occur when larger doses were used. Alcoholic subjects do not tolerate the use of pantopon-scopolamine very well. The application is followed frequently by a state of excitement, hallucinations, inco-ordinate movements of the arms and legs. In two patients this condition persisted for two days. Seventy-two operations were performed with scopolamine-pantopon; 35 appendectomies, 24 herniotomies including an incarcerated hernia, 3 hæmorrhoid operations, 1 gastroenterostomy for gastric cancer, 1 excision of the bowel in tuberculosis of the cæcum, 1 removal of a sarcoma of the ovary, 2 hydroceles, 1 excision of a tubercular epididymis, 1 enucleation of tubercular cervical glands, 1 opening of the mastoid.

Alcoholism, grave diseases of the heart and lungs,



as well as advanced age, may be considered contra-indications against the use of pantopon-scopolamine.

E. C. RIEBEL.

**Lynch: A Preliminary Report of Operations Under Extradural Anæsthesia.** *Med. Rec.*, 1913, lxxxiii, 235. By Surg., Gynec. & Obst.

In this article the author gives an account of the technique which he has evolved. He is a strong advocate of this method, combining as it does safety, efficiency, and a minimum of after complications. It insures a perfect anæsthesia, prevents shock, and allows of any surgical procedure below the cul-de-sac of Douglas.

By taking measurements from the posterior superior spine of the ilium to the left margin of the sacrococcygeal joint on either side, the opening of the sacral canal will usually be found where these two lines bisect. The skin around this point having been painted with tincture of iodine and sprayed with a little ethyl chloride, an injection of a 1:5000 solution of cocaine in an ordinary hypodermic needle is employed, in order to anæsthetize the skin so that a small incision can be made. The needle, passed through this incision at an angle of about 15 degrees, is then inserted close to the bone for about one inch, and about 4 cc. of a 1:500 cocaine solution is deposited on each side; this is usually sufficient. The trocar is then reinserted and allowed to remain in position until anæsthesia is established. This usually lasts about two hours, but if further anæsthesia should be necessary it can be more readily accomplished if the needle is allowed to remain in place.

Lynch reports five operations involving the rectum, which were all accomplished with absolute comfort to the patient, using not more than 1/6 grain in any instance.

The value of this method in hypersensitive individuals in whom it is necessary to explore the urethra or the bladder can easily be understood. Especially will it be found serviceable in old men on whom it is necessary to do a prostatectomy, or with any procedure involving the urethra or bladder.

**Neil and Crooks: Supraclavicular Anæsthetization of Brachial Plexus.** *Brit. M. J.*, 1913, i, 338. By Surg., Gynec. & Obst.

The brachial plexus emerges from under the scalenus anticus and lies in loose tissue which is easily infiltrated. The area into which the solution is injected is bounded internally by the subclavian artery, externally by the clavicle, and below by the first rib. The patient sits with head turned slightly toward the opposite side. The position of the subclavian artery is defined by palpation, and the puncture made just external to the artery. The site of the puncture is usually just internal to the point at which the continuation of the external jugular vein joins the clavicle; but in some cases, in which the artery lies further out than usual, the puncture must be made external to this point. However, the artery is the chief guide to the position

of the plexus, and after a little experience it can be used as the sole landmark. A fine needle 4 to 5 cm. long should be slowly inserted in a direction backward, downward, and inward, toward the second or third dorsal spine, so as to strike the upper surface of the first rib. As the plexus lies about 1.5 to 3 cm. from the surface just superficial to the first rib, it should be encountered before the first rib is reached. If the plexus is not struck before the first rib is reached it generally means that in order to avoid the artery the needle has been inserted too far out. The needle must be partially withdrawn and altered in direction, usually towards the artery, until the plexus is struck. When the needle reaches the nerve cords paræsthesia is produced in the arm and hand; when the paræsthesia has been definitely obtained, the syringe is carefully attached to the needle and 20 cc. of a 2 per cent solution of novocaine with adrenalin is injected. No solution should be injected until paræsthesia is definitely obtained, and it is important to remember that when the point of the needle is on the first rib it is too deep for the plexus. Apart from the skin puncture the injection is not painful; the paræsthesia in the arm is not severe, and any necessary alteration in the position of the needle is not accompanied by pain.

The author reports 40 cases. There were 4 failures. In 80 per cent anæsthesia was complete; in 10 per cent it was a failure. In 10 per cent, although the anæsthesia was incomplete it was sufficient for the operation.

The author states that to obtain satisfactory anæsthesia the following points must be strictly adhered to:

(1) Definite paræsthesia in the arm or hand must be obtained before any solution is injected.

(2) The injection should consist of 20 cc. of a 2 per cent solution of novocaine. If these points are not adhered to, the anæsthesia is likely to be light and patchy. Any solution injected near the plexus before paræsthesia is obtained may interfere with obtaining this paræsthesia, and so prevent localization of the plexus.

(3) To allow sufficient time for anæsthesia to develop, usually 5 to 15 minutes is sufficient, but as long as 30 minutes may be required.

This form of nerve blocking is free from danger, but the following objections have been raised against it:

(a) The risk of injuring the subclavian artery. This should be avoided, as the artery can be distinctly felt. It has been proved that puncture of the artery by a fine needle produces no ill effects.

(b) The pleura may be injured, and the solution injected into the pleural cavity. This is avoided if the instructions are carried out and the needle inserted until it comes into contact with the first rib, but no deeper.

(c) The possibility of paralysis of the nerve trunks of the arm arising as a result of the injection. There is only one case on record. In this instance there was paresis of the musculo-spiral, median, and ulnar nerves which lasted a few weeks.



The cases following are the first 40 tried by the authors and include all the failures: 2 amputation through forearm; 4 amputation of fingers; 6 reducing impacted Colles' fracture; 6 setting fracture of forearm; 11 suturing tendons and lacerations of arm; 4 incising cellulitis of arm; 1 sequestrotomy of humerus; 1 reducing dislocation of shoulder; 1 plating radius and ulna; 1 wiring olecranon; 2 moving stiff elbow; 1 scraping necrosed metacarpal.

M. S. HENDERSON.

**Molinari: Contribution to the Etiology of Anæsthesia Paralysis** (Beitrag zur Ätiologie der Narkosenlähmungen). *Veröffentl. a. d. Geb. d. Mar.-San-Wes.*, 1913, iv, 24.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author collected the following data from the literature: Anæsthesia paralyses are mechanical paralyses. The relaxed condition of the muscles fails to give a counteraction to the position in which the limbs are placed. Emaciated women are predisposed to such paralyses. The upper extremity is mostly affected. The whole plexus brachialis is usually involved but some cases of individual nerves or nerve groups are on record (Duchenne-Erb type — fifth and sixth cervical nerve; Klumpke's type — seventh and eighth cervical or first dorsal nerve). The cause is a compression of the nerve plexus between the clavicle and first rib or a laceration or overstretching of the nerve by certain positions of the arm. Isolated paralyses usually affect the radial nerve, due to the pressure of the operating table on the arm. When the fibers of the rami communicantes sympathici, running with the eighth cervical and first dorsal nerves, are injured, pupillary symptoms develop. The prognosis is always good, although it may be many months before complete use is restored. Six cases have occurred in the Berlin Frauenklinik — three affecting the upper part of the plexus and three the whole arm that had been used in taking the pulse during the operation.

Investigations on the living, as well as on cadavers, show that when the arm is raised to the level of

the shoulder or stretched posteriorly, a strong tension of the plexus is brought about in the region of the head of the humerus, especially if the upper arm is rotated inwardly and the head of the patient is pulled or rotated to the opposite side. In such a position of the arm the radial pulse disappears. The plexus is lax when the arm is raised beyond the level of the shoulders, but if the arm is pressed against the head, the plexus is compressed between the clavicle and first rib. The upper roots (fifth and sixth cervical nerves) suffer mostly, the seventh cervical less, and the eighth and brachial artery are unaffected, and the pulse is palpable. In order to avoid paralyses it is advised to keep the arms close to the thorax, flexed at the elbow, and the forearms held on the chest by means of the shirt.

ZANGEMEISTER.

**Kramer: The Rôle of the Lipoids, and Particularly Lecithin, in Narcosis.** *J. Exp. Med.*, 1913, xvii, 206.

By Surg., Gynec. & Obst.

Kramer takes up Reicher's theory that the lipæmia occurring in narcosis is a protective measure against the toxic effect of the narcotic on the body cells. Reicher suggests that the fat molecules act as amboceptors that unite with the molecules of the narcotic and thus neutralize the action of the narcotic. On this theory Nerking injected lecithin into animals and then tested their susceptibility to narcotics. He used various anæsthetics (chloroform, ether, morphine-scopolamine, etc.), and concluded that lecithin has an undoubted effect on the duration and after effects of the anæsthesia. Kramer repeated the experiment, but administered the narcotic intravenously. The same animal was used for both the lecithin and the control experiments, an interval of 36 to 72 hours being allowed to elapse between experiments. The intravenous injection of 5 to 30 cc. of a 5 or 10 per cent emulsion of lecithin did not inhibit the induction of anæsthesia and in six out of nine experiments it had no effect on the rapidity of recovery. Kramer concludes that these results do not bear out Reicher's assumption.

JAMES F. CHURCHILL.

## SURGERY OF THE HEAD AND NECK

### HEAD

**Härtel: Anæsthesia and Injection Treatment of the Gasserian Ganglion and the Branches of the Trigemini.** *Arch. f. klin. Chir.*, 1912, c, 192.

By Surg., Gynec. & Obst.

Härtel has devised a new method of reaching the Gasserian ganglion for the purpose of anæsthesia or for the curative treatment of trifacial neuralgia. He employs a special canula, 0.8 mm. in thickness, and 10 cm. long, with a flat point and a movable marker with which the desired distance is marked out by means of an aseptic rule. The solutions are

injected with a 2 ccm. Record syringe. The needle is inserted into the cheek at the level of the alveolar margin of the second upper molar tooth. With the aid of the finger in the patient's mouth the canula is directed between the ascending ramus of the jaw and the tuber maxillare, around the buccinator muscle to the infratemporal fossa. The depth to the planum infratemporalis is 5–6 cm. The direction in which the needle is inserted is such that the canula seen from in front points towards the pupil of the same eye and from the side points toward the articular tubercle of the zygoma. The principle of concentric puncture is employed. The puncture



of the foramen ovale is made by pushing along the hard, smooth surface of the planum infratemp. porale. After the foramen has been reached, the resistance will be gone and there will be radiating pains in the territory of the third branch of the trigeminus. To reach the ganglion the canula is inserted  $1\frac{1}{2}$  cm. deeper into the foramen ovale till pain is felt in the second branch of the fifth. Finally the syringe is attached and 1 ccm. of the solution slowly injected. The anæsthesia is immediately tested out.

The pain of the puncture is not severe as a rule. The injection is made slowly, drop by drop. For purposes of local anæsthesia or "Leitungs-anæsthesia" as Härtel calls it, 2% novocaine-suprarenin solution is employed in doses of  $\frac{1}{2}$  to  $1\frac{1}{2}$  ccm. For therapeutic purposes in trifacial neuralgias  $\frac{1}{2}$  ccm. of 80 per cent alcohol is injected. Anæsthesia is usually immediate and lasts on the average  $1\frac{1}{2}$  hours. The entire area supplied by the trigeminus on one side of the head is thus rendered completely anæsthetic.

Härtel reports 16 operations performed under anæsthesia of the Gasserian ganglion. Among these were 6 resections of the upper jaw, 2 extirpations of the tongue, 1 orbital tumor, 1 extraction of a foreign body from the orbit, 2 sarcomas of the nose, 1 plastic masseter operation and 3 smaller jaw operations. In 9 of these cases bilateral injections were made. Altogether the Gasserian ganglion was punctured 39 times, easily in 28 and with difficulty in 7. In 4 cases the injections were unsuccessful. Härtel recommends his method for operations on the anterior part of the skull, orbit, zygoma, upper jaw, nasal and buccal cavities, accessory sinuses, tongue and pharynx in combination with adrenalin and novocaine injections of the surrounding areas and cocaineizing the mucous membrane not supplied by the fifth nerve.

Härtel recommends the direct injection of the Gasserian ganglion in the treatment of trifacial neuralgia. He reports 14 cases favorably influenced by the injection. For mild cases he recommends novocaine injections. The alcohol injections were reserved for the most severe and desperate cases because of the danger of neuroparalytic corneal ulcerations.

Disagreeable after-effects were observed by Härtel especially after using too large doses. Headache, nausea and vomiting, giddiness, etc., were overcome by proper technique and keeping the patient on his back after the injection. Motor phenomena, such as dilatation of the pupil, transitory paresis of the n. abducens or paresis of the jaw muscles were occasionally encountered. A reginal herpes occurred in a number of cases. Corneal changes occurred chiefly after alcohol injections.

Härtel also gives careful anatomical data and technical directions for injection of the branches of the trigeminus. In a number of cases he succeeded in puncturing the foramen rotundum directly through the lower orbital margin and by injecting small quantities of novocaine suprarenin solution produced immediate anæsthesia in the territory of the

second branch of trigeminus. This anæsthesia was tested in a number of operations — is recommended where the other routes to the second branch are inaccessible for anatomical or pathological reasons. Endoneural injections are to be preferred to perineural injections.

Careful directions for injecting the maxillary nerve in the pterygo-palatine fossa are also given by Härtel. He reviews the entire subject of "Leitungs-anæsthesia" of the trigeminus, as worked out especially by Braunn and Offerhaus. Härtel's work is based on careful anatomical studies and accurate technical details, as reference to his original article will show.

ERWIN P. ZEISLER.

**Ritchie: An Unusual Case of Osteoma of the Superior Maxilla.** *Laryngoscope*, 1913, xxiii, 112.

By Surg., Gynec. & Obst.

The patient, a German of gigantic stature, had suffered from complete nasal stenosis for 17 years and presented the frog face typical of osteoma of the superior maxilla. The left orbit and its contents was displaced causing diplopia. Digital examination revealed a bony mass the size of a hen's egg in the naso-pharynx, almost filling it.

Müller, ten years before, under a local anæsthetic had removed by means of a trephine sufficient amount of the tumor to relieve the stenosis to some extent for a few months. Two years later S. L. McCurdy removed three ounces of the osteoma by way of an external incision.

Examination before operation revealed a purulent ethmoiditis with a fistula from the nasal cavity discharging into the inner canthus, which was constantly filled with pus.

An incision beginning at the inner end of the left eyebrow, extending over the nasal bones through the left naso-labial reflection, terminated at the mucous membrane of the lip. A second curvilinear incision, made from the first at the level of the inner canthus, extended to the malar prominence. This allowed the nose to be reflected well over the right cheek, exposing an ivory-like mass encroaching in every direction. The septum was practically all destroyed, the mesial walls of the antra were obliterated, the floor of the nose could not be seen and the ethmoid areas were encroached upon. The mass was with difficulty chiseled out in every direction until normal bone was encountered, sheet lead being utilized to protect the pharyngeal wall. The remaining ethmoidal cells were curetted. The right antrum was half filled by the mass, while the left one was completely filled. The tumor seemed to have originated in the left maxilla. The sinus to the inner canthus was obliterated and the wound closed, the mucous membrane first, silk being used externally and removed on the second day, leaving little scar formation. The cavity was packed through the nose with tincture benzoin compound gauze. Five months later there was no recurrence, and all distressing pain and insomnia had disappeared.

H. A. POTTS.



**Kirmisson: Temporo-Maxillary Ankylosis Studied from a Diagnostic Point of View** (L'ankylose temporo-maxillaire étudiée au point de vue du diagnostic). *Bull. d. l'Acad. d. Med.*, 1913, lxix, 95.

By Journal de Chirurgie.

Kirmisson has resected the condyle of the maxillary bone in two cases of temporo-maxillary ankylosis with good results. Before the operation the jaws could be separated only 4 or 5 mm. Since the operation they have quite normal movement. To obtain the best results we must be sure of our diagnosis. We must first consider whether we have a unilateral or bilateral ankylosis. All motions are very much more limited in a bilateral, than in a unilateral ankylosis. The condyle on the good side will be found to move in a circle around the ankylosed condyle as a pivot. In this movement the chin is carried toward the affected side.

Another important point is with reference to the atrophy of the inferior maxilla which accompanies the temporo-maxillary ankylosis. This is much more marked when the ankylosis occurs at an early age.

In cases of unilateral ankylosis the atrophy corresponds to the affected side. When we examine a case of unilateral maxillary ankylosis the affected side appears the more developed while the good side appears atrophic. This is explained in the following manner: since there is an atrophy of the body and ascending ramus of the jaw, the prominent parts have disappeared. On the well side, the body of the maxilla is enlarged, the symphysis is pushed beyond the midline and the soft parts cover the prominences less perfectly.

CHIPOLAU.

**Frazier: Procedures Adapted to the Exposure of Structures at the Base of the Skull.** *Lancet-Clinic*, 1913, cix, 154.

By Surg., Gynec. & Obst.

While the technique for exposing the cortical surface of the brain and lesions in the frontal, parietal, and occipital lobes has been elaborated and refined until the procedure has become comparatively simple and safe, there still remain structures at the base of the brain in the posterior, middle and anterior fossa which are much more inaccessible. The author here describes the technique which he has elaborated for approaching certain of these structures. First of all, in the posterior fossa, intracranial division of the auditory nerve is indicated in certain cases of persistent and intractable tinnitus or persistent and intractable vertigo of central origin. Frazier has recently placed on record the first successful operation of this character performed in this country. His technique consists essentially in a unilateral suboccipital craniectomy, extending from the level of the lateral sinus down to the foramen magnum, and from the emissary sinus to the median line. By following the petrous bone, the internal auditory meatus is recognized and the auditory nerve exposed, great care being taken to avoid traumatizing any of the centers in the medulla or injuring the facial nerve.

In the middle fossa, the uncinate region has

become of particular importance on account of the lively interest in the hypophysis. To expose the uncinate region, an osteoplastic flap should be reflected with its base on a level with the base of the skull and the zygoma resected in order to allow the flap to be reflected downwards far enough to allow of an unobstructed view on the plane of the base of the skull. To displace the cerebral hemisphere sufficiently to bring the structures into the field of vision and without exerting undue pressure, Frazier is in the habit of doing a temporal decompression on the opposite side at a previous sitting. This is not enough, however. In brain tumor cases there is so often an associated internal hydrocephalus that there is almost invariably an abnormal degree of intracranial tension. For the relief of this condition Frazier has found it advantageous to perform a lumbar puncture, and when the deep-seated structures of the uncinate region are concerned he has found it absolutely essential to withdraw some of the cerebro-spinal fluid from the large basal cisternæ. Displacement of the brain is a very important phase of the technique, since the brain cannot be compressed but must be displaced. Additional space may be acquired to provide for the increase in the cranial contents by withdrawing fluid from the subarachnoid space, but more especially from the lateral ventricles. As the Gasserian ganglion is classed among the basal structures, Frazier alludes briefly to several features which have simplified the operation for trigeminal neuralgia as he has developed it, among which is the shortening of the period of anæsthesia and the diminution in the amount of the anæsthetic by injecting the ganglion with alcohol as soon as it is exposed. He makes a query-shaped incision beginning in front at the hair line and ending a little above the external auditory meatus; the posterior aspect of the ganglion is stripped of its dural covering, and the sensory root exposed and avulsed. By keeping the incision within the margin of the hair line, and by carefully avoiding the upper branch of the facial nerve, the cosmetic results are perfect.

The hypophysis is probably the most inaccessible of any of the basal structures. While there are some cases in which the conformation of the sella turcica makes it necessary to approach the gland from below or transsphenoidally, the author feels that in most instances preference should be given to the intracranial method through the anterior fossa, as this route affords a wider avenue of approach and greatly lessens the danger of infection. The technique of the transfrontal approach, which he has used with remarkable success in four cases, consists essentially in the reflection of an osteoplastic flap, uncovering the right frontal region, the lower margin of which is just above the supra-orbital ridge. The latter, together with a portion of the orbital roof, is then resected, as suggested by McArthur in his recent contribution to the surgery of the hypophysis, and what remains of the orbital roof rongeué away down to and includ-



ing the margin of the optic foramen. A transverse incision about two centimeters long is then made in the dura, extending across from one anterior clinoid process to the other and about a centimeter above the base of the skull, and the pituitary body readily exposed. Frazier has found the operation quite devoid of serious difficulties, and the avenue of approach afforded by it excellent.

**Haynes: The Treatment of Meningitis by Drainage of the Cisterna Magna.** *Arch. Pediat.*, 1913, xxx, 84. By Surg., Gynec. & Obst.

Haynes believes that the symptoms of meningitis are due to two things: first, pressure due to the collection of fluid; and second, toxicity due to the action of the infecting organisms. The former of these is of importance early, because by the increase of pressure there is produced a decrease in the blood supply due to pressure on the blood-vessels, which in turn renders the meninges less able to combat the action of the bacteria. In the early diagnosis of meningitis he lays great stress upon the disappearance of sugar from the cerebrospinal fluid and states that if the sugar has disappeared it is not necessary that the bacteria be found in order to reach a diagnosis of meningitis. From a practical standpoint he does not believe that it is of a great deal of importance in the early stages to differentiate between the different organisms causing meningitis.

In only one form of meningitis, the meningococcic form, is there any hope for recovery offered; and this variety can be early diagnosed.

For the surgical treatment of meningitis the first fundamental principle is that it must be applied early. The second fundamental principle is that surgical treatment can be of advantage only when the cerebrospinal fluid drains freely and continuously. For this purpose he has chosen the region of the cisterna magna for operation. The incision is made in the midline, from the occipital protuberance to the spinous process of the axis; an opening is made in the skull with a trephine, the periosteum gently lifted up, and with a DeVilbiss bone cutter a small channel is cut out down to the foramen magnum. The dura mater and arachnoid are then opened slightly and the fluid allowed to escape slowly; the opening is then made broader and a rubber wick inserted. Should the lobes of the cerebellum be glued together with exudate they can be gently separated. The soft parts are allowed to fall together and are sutured by two to four deep catgut sutures. The skin is closed with silkworm gut. Plain sterile dressings are applied. The operation requires from 15 to 20 minutes in children.

Haynes has operated upon six cases of this sort, and in none of these was there any tendency to cerebral hernia. All the patients died, but he believes that this was due to the fact that treatment was undertaken too late.

C. G. GRULEE.

**Abalos and Fracasi: A Case of Serous Cyst of the Cerebellum with Operative Cure** (Un cas de kyste séreux du cervelet guéri par l'intervention). *Rev. med. d. Rosario*, 1912, Nos. 5 and 6, 387. By Journal de Chirurgie.

There are numerous varieties of cerebellar cysts. The more recent works dealing with this subject mention parasitic cysts (echinococcus, cysticercus), dermoid cysts, serous cysts due to transformation of a sanguinous effusion or of an area of softening or of a tumor (glioma), and serous cysts of unknown origin. The authors believe that to this list should be added traumatic cysts and cholesteatic cysts. They explain the origin of traumatic cysts, not by transformation of a hematoma, but by an inflammatory process which leads to the formation of adhesions between the meninges, thus walling off a closed cavity which becomes cystic. If such cavities are formed in the prolongation of the pia mater which enter the cerebellum, a cerebellar cyst will be the result. Traumatism, of course, is not the only factor in the production of such inflammatory serous cysts. Syphilis, tuberculosis, otitis media, etc., may likewise be the cause.

By cholesteatic cyst, the authors mean similar inflammatory cysts in which the presence of cholesterine is explained by a precedent destruction of brain tissue, or by some unknown defensive action of the nerve tissue in the presence of bacterial infection.

The authors then take up the anatomical and pathological characteristics of the serous cysts of the cerebellum. Cysts which result from the dissolution of a glioma show ill defined walls which are often very vascular. Histologically, layers of neuroglia, often quite dense, are found mixed with embryonic vascular channels. The tumor is often ill differentiated from the surrounding tissues, a fact which renders complete extirpation difficult. In cysts which have arisen from a hematoma, or have followed a traumatism, the wall is formed by more or less dense fibrous tissue. The gray matter about a cyst often shows small punctiform hemorrhages or areas of encephalitis. The liquid cystic contents are lemon colored and contain little albumen. Occasionally the crystals derived from hæmoglobins are found. There are no sufficiently characteristic findings, however, to allow of a diagnosis of the variety of cysts.

The authors report the case, which was the occasion of this memoir: A man of 29 years, with a negative past history, began in August, 1912, to suffer with headache and to exhibit difficulties in walking. The headaches, which at first were of moderate intensity, soon became very violent. Vertigo and loss of consciousness appeared as accompanying phenomena. The headaches were intermittent. They were always localized in both temporal regions. Ringing in the ears, troubles in vision, nausea and vomiting developed in the order given. The patient was examined in September, 1912, and in the occipital region a small scar was found which



was the result of a blow from an iron bar. The pupils were normal and reacted well; there was no diminution of the visual field; no paralysis of the ocular muscles, no nystagmus. Auditory acuity was normal. No cranial nerve paralysis was found in the examination. No bladder symptoms. The reflexes were normal. The gait was swaying and drunken. Romberg's sign was positive. Cerebellar asynergy was present as was also diadococynesis. Lumbar puncture yielded an apparently normal cerebro-spinal fluid under high tension. No relief was experienced; indeed, the headaches became more pronounced. In October the symptoms were aggravated. The patient became soporous. He slept no longer. Visual acuity was considerably diminished. There was convergent strabismus and nystagmus. The headaches were now in the occipital region. On the right side there was oedema of the papilla. There was stasis on the left, with retinal hæmorrhages and very marked neuro-retinitis. The patient was operated on the 13th of October. The ocular signs led to a choice of the left side. Chloroform anaesthesia. Cushing's skin incision was used. The two cerebellar fossæ were opened. Cerebellar puncture on the left yielded a clear fluid; and after the opening of the dura mater a cyst was evacuated. The dura mater was then closed, except for a small opening left opposite the cyst cavity. The patient left the hospital on the 15th day cured. Headaches had disappeared, vision much improved, the gait normal.

SALVE MERCADÉ.

**Weed, Cushing and Jacobson: Further Studies on the rôle of the Hypophysis in the Metabolism of Carbohydrates; the Automatic Control of the Pituitary Gland.** *Bull. Johns Hopk. Hosp.*, 1913, xxiv, 40.

By Surg., Gynec. & Obst.

These studies were for the most part made during the past two years in the Hunterian Laboratory of the Johns Hopkins University. They are very exhaustive and are best summarized in the authors' own words: "that from the results of the experiments which have been cited in this paper it is fair to assume the existence of a nervous control on the part of the sympathetic system over one form at least of the secretory activities of the pituitary body." The particular function of the gland, and presumably of its posterior lobe, on which their studies have been based concerns the elaboration and discharge of a substance capable of evoking glycogenolysis.

Provided there is a storage of glycogen available for discharge, the authors conclude that:

1. A piqûre of the hypophysis in the rabbit is comparable, in its glycosuric response, to a piqûre of Bernard's so-called sugar center in the fourth ventricle.

2. Stimulation of the superior cervical ganglion by faradization or even by the manipulations necessary for its exposure, causes glycosuria in the rabbit, cat and dog.

3. Stimulation of the superior cervical ganglion, after exclusion of all possible downward impulses to the abdominal viscera by way of the vagi, cervical sympathetic trunks, or spinal cord, leads to glycosuria.

4. Stimulation of the superior cervical ganglion, after separation of all synapses of the sympathetic system by administration of nicotin, causes glycosuria.

5. Direct faradic stimulation of the hypophysis itself, after exposure by a transphenoidal operation, gives glycosuria even after preliminary transection of the spinal cord and cervical sympathetic trunks.

6. If the posterior lobe of the hypophysis has previously been removed by operation, the usual stimulation of the superior cervical ganglion fails to give glycosuria.

7. Direct faradic stimulation of the hypophysis provokes glycosuria even after transection of the spinal cord above the splanchnics.

8. A Bernard piqûre will likewise cause glycosuria, even after transection of the spinal cord above the splanchnics.

The pituitary body, and more particularly its posterior lobe, plays a significant rôle in the metabolism of carbohydrates, and its action in this respect is under the control of fibers which reach the gland by way of the superior cervical sympathetic ganglion. Stimulation of this nervous pathway at the so-called sugar center in the fourth ventricle, at the superior cervical ganglion, and by excitation of the pituitary body itself, liberates a chemical substance which causes glycogenolysis and glycosuria, independent of any possible nervous impulse reaching the glycogen-holding cells of the muscles or abdominal viscera. GEORGE E. BEILBY.

## NECK

**Grubé: The Effect of Thyroid Extract on the Blood Pressure and Isolated Heart** (Zur Frage der Wirkung des Extraktes aus Kropten auf den Blutdruck und das isolierte Herz). *Russk. Vrach.*, 1913, xii, 9.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author experimented on dogs, into the veins of the neck of which he injected the extract of the healthy thyroid and toxic extracts of exophthalmic goiters, in doses of 0.5 of extract for each kg. The experiments on the isolated hearts were done with the apparatus of Borschaw in solutions of the extract of 1 to 500. He came to the following conclusions: The extract of the toxic thyroid produces a lowering of blood pressure in most cases. It produces an increase in the height of the peripheral pulse and also the rate of the pulse. The reduction of the blood pressure is dependent in a large measure upon the diminution of the tonus of the vessels and dilatation of the peripheral vessels. On the isolated heart the extract of toxic thyroids increases the pulse rate in most cases and increases the height of the pulse wave. The degree of the effect of the extract of





Fig. 1 (Mayo). Flap of skin and platysma muscle laid back.

thyroid on the blood pressure can be brought into relationship clinically with the attacks of intoxication. Observations on the effect of extracts of healthy thyroid on the blood pressure of animals into the abdominal cavity, of which a thyroid enucleated from a diseased animal was introduced, give rise to the opinion of an increased sensibility to thyroid toxins. The condition resulting reminds one of the appearances of anaphylaxis. This probably explains the effect of even small doses of thyroid extracts on patients suffering with toxic goiter.

JOFFE.

**Mayo: Goiter.** *Illinois M. J.*, 1913, xxiii, 125.  
By Surg., Gynec. & Obst.

Formerly supposed to develop from three anlagen, the thyroid is now known to be wholly formed from the median one, originating between the three divisions of the tongue, from which place it descends in the neck to its resting place astride the anterior upper trachea. Anomalies are caused by failure of

the gland to develop, by its continuing its foetal form as a permanent structure, by failure to leave its original location (as lingual thyroid), by portions breaking off in the descent (attached or completely separated), thus causing accessory or aberrant thyroid, or the rather common occurrence of becoming entangled in the developing hyoid bone, stringing out a portion of the gland known as the pyramidal lobe. Sometimes, though rarely, pharyngeal embryonic mucosa is drawn down in the line of descent causing the thyroglossal duct cyst.

While the thyroid is subject to frequent diseases which increase its size, only a small percentage of such enlargements are malignant. Most of them are simple goiters and conform to the normal outline of the gland. Others, however, appear as single large adenomata or as multiple small adenomata.

The goiter of adolescence is a functional oedema. It often disappears without treatment and seldom requires operation. Iodine is very effective in these cases. Simple goiter and adenoma, through de-



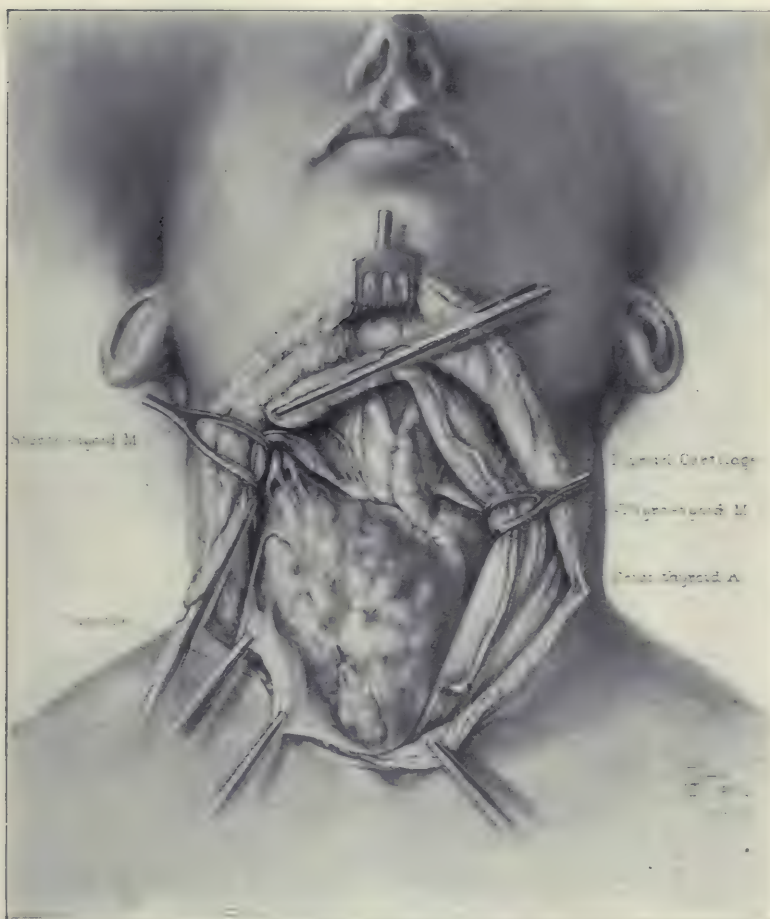


Fig. 2 (Mayo). Incision into true capsule.

generation coming from natural causes or induced by stimulation of iodine in long standing goiters, may produce the symptoms of toxæmia, with attendant effects on the heart, kidneys, and liver. These cases may have all the nervous symptoms and heart complications of a bad case of Basedow's disease, with staring, but not protruding, eyes. Operations on them are fully as serious as in the ordinary case of Graves' disease. There is no question but that Graves' disease is a chronic malady and only occasionally runs an acute course to termination. According to Plummer's observations, there is a period of descent during the first few months before the heart dilates. After this occurs the patient continues in a more serious condition to the end of the first year. During the second year the case becomes a chronic one, subject to fluctuations. While the large majority of cases can be easily diagnosed from the nervous type, i. e. tachycardia, goiter, eye symptoms and blood changes, there are a few cases in which it is difficult to determine true hyper-

thyroidism from neurasthenia, myocarditis, or other diseases, as well as a few cases in which there may be complication by affection of the hypophysis, thymus, or adrenals. These patients are not cured by operation on the thyroid.

The mortality following operation for simple goiter is but a fraction of 1 per cent, while that following exophthalmic goiter varies from 1 to 2 per cent. Relapses occasionally follow the removal of adenomata. They also occur in some cases of Graves' disease, due to insufficient removal of gland or to an increase in what was left, which may not show or cause symptoms for some years after the primary extirpation. The indications are to remove more of the gland.

**Duhigg: Goiter.** *Iowa M. J.*, 1913, xix, 375.  
By Surg., Gynec. & Obst.

The thyroid gland belongs to the type known as the ductless glands. By a different classification it belongs to the protective glands, the others being



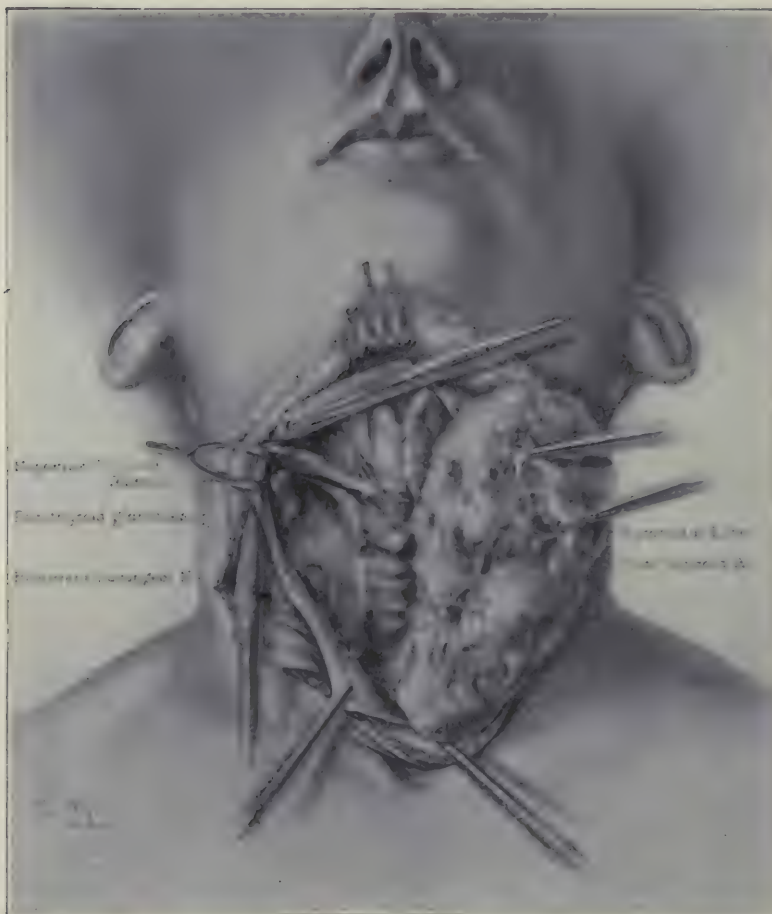


Fig. 3 (Mayo). Ligation of vessels and removal of gland.

digestive or eliminative. "In association with the parathyroids, the thyroid gland is an important factor in the control of calcium metabolism. In association with the hypophysis, it is concerned in the development of the body; and together with the adrenals and the hypophysis it serves to control blood pressure and circulation through the so-called internal secretion.

"That the thyroid is a sex gland is indicated by the fact that in some invertebrates it empties by a duct into the uterus." (Chas. H. Mayo.)

An excess of secretion of the thyroid gland produces a profound influence on the muscular and nervous systems and later on the internal organs including the heart, liver and kidneys.

It influences the growth of bone, and infection, by increasing its functional activity, may cause increase in the length of bones. Unusual height for age usually accompanies hyperthyroidism.

Hyperthyroidism is due to an increased functional activity and not to perverted function. Kocher

treated persons suffering from deficient thyroid function by transplanting scraps of Basedow thyroid, with the same results that followed the use of normal thyroids.

McCarrison succeeded in producing goiter in five out of twelve goats by the use of drinking water contaminated with the feces of sufferers from goiter. In twelve control animals no change in the thyroid occurred. This indicates that goiter is probably the result of infection with material capable of existing in ordinary drinking water; that the infection leaves the body with the feces, contaminates water supplies, and that the infective agent is killed by boiling the water.

Other alleged causes of goiter are caffeine, persistent thymus, interference with blood current, heredity, therapeutic use of iodine, nervous breakdown, and pulmonary tuberculosis. Of the female patients, 60.7 per cent, and 51 per cent of the male patients in the state sanatorium for the treatment of tuberculosis have enlarged thyroids. General mus-





Fig. 4 (Mayo). Operation completed.

cular weakness, sweating, fatigue, rapid pulse, anæmia, and loss of weight are common to both diseases when well established. This percentage is too great to be incidental.

Therapeutic measures include the milk of thyroidless goats, Beebe's serum, McCarrison's "compound vaccine," thyroid extract, iodine, X-ray, removal of the thymus gland, and symptomatic treatment. The latter, which includes complete rest in bed without any possibility of being excited and the use of any drugs that seem indicated, often gives good results. Ergot and quinine hydrobromate act favorably.

If improvement is not permanent, surgical treatment should be considered. This gives the best results if the pulse rate is less than 125. The mortality in surgical cases is less than 4 per cent. Crile's

excellent work on the surgery of the thyroid shows the great value of extreme caution to avoid even slight trauma and psychic stimuli.

If symptoms recur following a period of improvement after an operation, the indications are that not enough of the gland was removed, and the removal of more of the gland should not be delayed.

**McKisack: Atypical Exophthalmic Goiter.** *Brit. M. J.*, 1913, i, 208. By Surg., Gynec. & Obst.

The author says that while the diagnosis of well established cases of Graves' disease is an easy task, there are many atypical cases not so easy of diagnosis. He furnishes a table of 23 cases and touches on their types. In his treatment he advocates the X-ray. He also suggests that the name hyperthyroidism be used rather than exophthalmic



goiter. The author says the cases are too few to permit any reliable generalizations to be based on them; but it will be observed that the heart rate in all was above normal, and in practically all the patient was aware of the rapid beating, either in the form of general throbbing of the arteries or as palpitation of the heart. This is the symptom which should always arouse suspicion, and when combined with tremor and even a slight protrusion of the eyeballs, it may be accepted as an evidence of hyperthyroidism. This last named sign, however, was absent in 15 of the 21 cases. Careful examination will generally reveal an increase in the size of the thyroid, sometimes only to a very slight degree. In 3 cases it was normal, in 5 it was of moderate size, in 2 considerable enlargement existed, and in 11 there was slight enlargement. Tremor was absent in 9 of the cases. Twelve of the cases were between the ages of puberty and 30, and the remainder were between 30 and 60. All but 3 were females, and one of the three men, while incomplete in the developmental signs when first seen, soon progressed rapidly in an unfavorable course and became a typical case in a very short time. Two of the cases, as already mentioned, showed vasomotor excitability. M. S. HENDERSON.

**Chrastajew: Pathological Anatomical Changes of Internal Organs in Basedow's Disease** (Pathologisch-anatomische Veränderung an einigen inneren Organen bei Morbus Basedowi). *Russk. Vrach*, 1913, xii, 9.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author publishes the results of microscopic examination of different organs of seven patients who died with Basedow's disease. The thyroid showed changes typical of this condition. Testes showed little change. In the uterus and especially the lactile glands there were atrophic changes of the specific elements and a proliferation of connective tissue. Macroscopically the thymus is enlarged. There was either a persistent thymus of childhood or a secondary hyperplastic regeneration of the thymus or finally one in which the greater part of the tissue was composed of fat. Hyperplasia of the entire lymphatic system, the spleen, and lymph glands was present. The adrenals showed a

hyperæmia and a lack of development of the medulla. The hypophysis cerebri showed hyperplasia of a chromophilic type, mostly eosinophiles. The heart, liver and kidneys showed traces of marked parenchymatous changes. The follicles of the intestinal tracts were inflamed. JOFFE.

**Buschan: Thyroid Therapy** (Schilddrüsenbehandlung). *Real-Encyclop. d. ges. Heilk.*, 1913, 174.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author tabulates all those diseases that are benefited by thyroid therapy. Thyroid treatment is unquestionably indicated in all diseases where the gland functionates too little or not at all, as in myxœdema and cachexia strumipriva. A relative insufficiency of thyroid secretion may cause insignificant symptoms during menstruation, pregnancy, and climacterium.

From the list of diseases in which thyroid therapy has been successfully used, the following are of gynecological interest: hæmophilia, uterine hæmorrhage, chronic constipation, uterine fibroids, vomiting of pregnancy and deficient lactation. Thyroid treatment has been made use of in hæmophilia because it was thought that the calcium assimilation could thus be increased. Only a few cases of successful treatment are known. Uterine hæmorrhage and menorrhagia during the menopause are influenced favorably when other symptoms of hypothyroidism are present. In 61 cases of chronic constipation with symptoms of hypothyroidism the author used thyroid preparations, on account of the relation of the thyroid to the neuro-muscular elements of the intestinal tract. The results were gratifying. Of 17 cases of uterine fibroids the tumor decreased in size in 12 instances, and disappeared entirely in one patient. In another, the menses ceased.

The author uses 0.1 to 0.3 tablets of the dried gland. He begins with 0.1 g. and increases after he has determined how the individual reacts. The use of some good preparation of arsenic avoids any harmful action the thyroid preparation may possess. The diet should be mainly of albuminous vegetables. Alcohol should not be used in any form. Hyperthyroidism, produced by thyroid medication, is a serious complication in patients with heart disease.

GRAEUPNER.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Powers: Tuberculosis of the Breast.** *Ann. Surg.*, Phila., 1913, lvii, 171. By Surg., Gynec. & Obst.

The author reports two additional cases, bringing his total to four. His first case, reported in 1894, died shortly after from pulmonary tuberculosis. The second, reported in 1897, is alive and well.

**CASE 1.** A woman 23 years old, with a slowly growing, doughy mass in the lower outer quadrant

of the left breast, had a fistula, which discharged thin pus. The breast and axillary glands were removed, together with the fascia overlying the large pectoral muscle. Smooth healing occurred. Pathological examination showed both breast and glands tuberculous. Patient was seen three years after operation, and was then well.

**CASE 2.** This was a girl, 15 years old, with a diffuse, irregular, doughy mass in the outer upper hemisphere of the right breast. The lump had



grown slowly and patient had gradually lost weight and strength. The entire axilla was occupied by large hard masses. Three discharging fistulae were present. The lungs were free. Operated March, 1912. The upper outer half of the breast was removed, together with the fascia from the pectoralis major muscle. On cut section, it seemed as though the incision was through a healthy part of the gland. For cosmetic reasons the inner part of the breast and the nipple were left. The pectoralis muscle was divided and the subclavian region and axilla were cleared of glands. These were adherent to the vein. The wound was closed with drainage and healed promptly. Pathological report: Tubercular lesions found in skin covering breast, in underlying tissue, and in superficial portions of the glandular structure, but did not extend deeply. Where the gland was involved the lesions apparently occupied the seat of a former group of gland acini, which had been destroyed by the tuberculous process. The fibrous tissue was normal. The axillary glands were frankly tubercular.

Small doses of tuberculin were administered for several months following the operation. She gained 17 pounds in weight in six months. At that time there were no evidences of tuberculosis anywhere. The author advises that the entire gland be removed as a rule, but in this instance the risk was run because of the age of the patient. He thinks the axillary glands were the seat of the infection, and the involvement of the breasts was secondary.

The author reviews the recent literature on the subject, and gives a very good description of the various pathological conditions met with in this disease. He states that on palpation in the living subject the breast presents one or several more or less voluminous, superficial, subcutaneous or deep hard nodules, at the level of which the skin is thickened and congested when the lesion is directly underneath it. These nodules are located in the gland or at its periphery, sometimes quite a distance from the nipple. In long-standing lesions an orifice may have formed spontaneously or after incisions; this granulating fistulous opening leads to a deep, purulent focus lined with fleshy granulations. A surface section shows grayish, rounded nodules composed of inflammatory tissue, semi-transparent, from the size of a hempseed to that of a small pea, disseminated in a portion of the gland and caseous in their centers. These nodules are either isolated, more or less distant from each other, or confluent. Their caseous, yellowish center, being lifeless, has a tendency toward disintegration, infiltration with serum or pus, and transformation into small cavities. These cavities may coalesce. One or more acini may take on the caseous, dry appearance. The extra-acinous milk ducts of all sizes are involved at the same time; their peripheral connective tissue is the seat of leucocytes; the epithelial cells become larger than normal and frequently present several nuclei. This increase in epithelium and leucocytes fills and distends the cavity, which in turn becomes

caseous. Tuberculous granulations project at the internal surface of the milk ducts; the membrana propria of which is finally destroyed. These granulations possess variable numbers of giant cells, surrounded by inflammatory tissue containing mononuclear leucocytes. The secretion formed changes the milk ducts into actual cavities with tuberculous walls. It is comparable to the course in peribronchial tuberculosis. Bacilli may be found. The axillary glands are often tuberculous; they are either primarily or secondarily infected. In mammary tuberculosis, with a chronic course, the tuberculous granulations are isolated and disseminated rather than confluent, but nevertheless perfectly characterized by their giant cells as well as by the epithelioid cells and peripheral lymphatics. The connective tissue is the primary seat of the infection.

From the anatomical as well as the clinical point of view, mammary tuberculosis appears under two principal forms—the disseminated and the confluent. The latter is by far the most common. Between these two extremes various intermediate forms may come under observation. While the diagnosis is not especially difficult in certain cases, it may become practically impossible in others. The condition may be confused with any solid or liquid tumor of the breast. The prognosis of life is variable, but the gland itself is generally doomed.

In regard to the treatment, the following procedures may be used:

(1) Curetting the sinuses; (2) cauterization of the sinuses; (3) injection of the sinuses and cavities; (4) incision or aspiration of abscesses; (5) removal of tumor alone; (6) removal of axillary glands alone; (7) removal of the tumor and a portion of the breast; (8) removal of the breast and tumor; (9) removal of the breast and axillary glands (Schley). The author recommends the latter operation, including the pectoral fascia, as the axillary glands are almost always tuberculous. In exceptional cases (advanced pulmonary tuberculosis) one of the other operations may be resorted to.

EDWARD L. CORNELL.

**Halsted: Developments in the Skin-grafting Operation for Cancer of the Breast.** *J. Am. M. Ass.*, 1913, lx, 416. By Surg., Gynec. & Obst.

Halsted describes the modifications of his operation for cancer of the breast which he has made during the past quarter of a century. The changes relate chiefly to the securing of perfect motion and to the prevention of swelling of the arm.

He is convinced that the incision down the arm should be abolished because (1) it endangers the circulation of the axillary and subclavicular flaps and hence not infrequently causes an edge-necrosis and thus infection of the subclavicular dead space in which lie the large blood vessels; (2) there is always more or less shortening of the scar which results from the longitudinal incision down the arm and, in the majority of cases, on abducting the arm beyond 90 degrees a point would ultimately be



reached, as the elbow approached the head, at which a band of skin and cicatricial tissue would tug between the chest wall and shoulder. This tugging band quite invariably was found to be in the line of the contracted longitudinal arm-scar.

In making the toilette of the wound, the skin above and to the outer side of the axilla is utilized chiefly for the perfect obliteration of the subclavicular dead space, the skin-margin being stitched to the first intercostal muscle at the highest point of the new axilla and then at other points to the intercostal muscles along the entire circumference of the wound, tension on the skin employed for the obliteration of the subclavicular dead space and for the covering of the vessels being assiduously avoided. The raw surface on the chest wall is covered with large Thiersch grafts, and the grafted area should extend to the extreme apex of the axilla. During the process of stitching and grafting the arm should be abducted to at least 90 degrees and at times the abducted elbow should be given wide excursions in order to satisfy the operator that the freest movement of the arm in all directions is guaranteed.

Halsted advocates skin grafting rather than plastic operations for the covering of the defect; and for the following reasons:

1. An almost unlimited amount of skin may be removed — in some cases more, in some less than formerly removed. "Whatever a surgeon's views may be, in general, as to the amount of skin which should be removed, he is certain at times to be confronted with cases which clearly demand excision over a very wide area. Whether the grafted area is large or small the time required for the healing of the wound and the range of motion permitted to the arm are the same.

2. "Skin grafts present a definite obstacle to the dissemination of carcinomatous metastases." When the tendency to dissemination in the skin is very great, the author has occasionally made what he terms a moat to prevent further spread of the carcinoma in the skin.

3. Recurrences in the deeper planes may be promptly recognized under the thin grafted skin.

4. "The inner or thoracic wall of the axilla being lined to the extreme apex with grafts, the skin of the outer flap may be utilized, in redundant fashion, for covering the axillary vessels, for obliterating the subclavicular dead space and for elevating the axillary fornix."

The extreme swelling of the arm, which so frequently has been observed by all surgeons, has not occurred in any of the cases operated upon by the author's modified method.

**Hamman and Sloan: Induced Pneumothorax in the Treatment of Pulmonary Disease.** *Bull. Johns Hopk. Hosp.*, 1913, xxiv, 53.

By Surg., Gynec. & Obst.

The authors assert that the application of induced pneumothorax should not be restricted to any par-

ticular disease or type of case. It has been made use of chiefly in pulmonary tuberculosis, but numerous instances are recorded where patients with bronchiectasis and chronic non-tuberculous infections of the lungs have been similarly treated. The authors' experience has been gathered from unfavorable and desperate cases of pulmonary tuberculosis. Many of the patients they operated upon at first were not selected in any medical sense. They were accepted because, conscious of their progressing disease, they were willing to risk a new method of treatment, while more suitable patients, withheld their consent. Recently they have induced pneumothorax under more favorable conditions, and they express the hope that in the future the opportunity may present itself to test its value in earlier stages of the disease. They outline in this article various methods of inducing pneumothorax, including Bauer's, Murphy's and Forlanina's, and also the method devised by themselves, which is in reality a modification of Bauer's. The apparatus which they use is also described in detail. The method consists briefly in introducing into the pleural sac, through a needle, air or nitrogen gas.

Since all the cases reported by the authors were suffering from moderately or far advanced pulmonary tuberculosis, it clearly would be futile to gauge the value of pneumothorax treatment by classifying them according to the stage of the disease. A just estimate of the value of the treatment, it seems, can only be gained by a study of the individual cases. However, some general grouping is desirable, therefore the authors divide the cases according to the success attending their efforts to produce collapse of the diseased lung. They arrange them in four groups:

1. In 3 cases induction of pneumothorax was followed by death or a serious complication.

2. In 3 cases it was impossible to produce pneumothorax.

3. In 7 cases only a partial pneumothorax was produced.

4. In 7 cases a complete pneumothorax was produced.

In all of the cases in Group 4 the induction of pneumothorax was followed by diminution of cough and expectoration. Six of the 7 cases had suffered from hæmoptysis of varying grade, which did not recur after the pneumothorax was complete. All of the patients showed marked improvement in their general condition except one. This case lost considerable weight but was otherwise well. From an exhaustive study of the literature and the observations of the work of the authors upon this important subject, they seem justified in drawing the following conclusions:

1. Induced pneumothorax is a harmless procedure and the operation, carefully performed, is without danger.

2. In 3 out of 20 cases it was impossible to produce any pulmonary collapse owing to general pleural adhesions.



3. The pneumothorax has, in most instances, an immediate and striking influence upon the cough and expectoration. Tubercle bacilli may disappear from the sputum.

4. Constitutional symptoms abate more slowly. In most instances there is at first a loss in weight followed by a gradual rise.

5. The total collapse of one lung causes surprisingly little inconvenience. Usually there is but slight dyspnoea on exertion. Many of the patients with an induced pneumothorax assist actively in the work about the sanatorium.

6. The procedure is of great value in the treatment of pulmonary hæmorrhage.

7. While induced pneumothorax will never become a routine method for the treatment of pulmonary tuberculosis, still in selected cases it offers a prospect of temporary and permanent relief when the usual methods of treatment have been unsuccessfully tried. Quiescent lesions in one lung, with acute recrudescence in the other, are the most favorable for the treatment. Its use need by no means be limited to strictly unilateral lesions, but when there is advanced disease of both lungs little benefit can be expected. It would seem advisable not to withhold the treatment until the patient is hopelessly advanced, but to apply it judiciously to suitable moderately advanced patients in whom the disease tends to progress in spite of appropriate treatment.

GEORGE E. BEILBY.

**Bernstein: A Clinical and Pathological Report of a Case of Primary Malignant Disease of the Pleura.** *Albany M. Ann.*, 1913, xxxv, 88.

By Surg., Gynec. & Obst.

A female, aged 69, presented a history of dyspnoea on exertion, and neuralgic pains radiating from the left side of the chest. Physical examination revealed the presence of fluid within the left pleural cavity. Thoracentesis was performed. In fact, within a period of one month 157 ounces were withdrawn at repeated tapings. There had been, meanwhile, no elevation of temperature or pulse. Patient did not raise sputum. Guinea pig inoculations with the fluid were negative. Smear preparations from the sediment showed the presence of lymphocytes, eosinophiles, and many clusters of large nucleated cells; the latter were ten to twelve times larger in diameter than the small lymphocytes. No mitoses were seen. The patient died 3½ months after the onset of the symptoms. At autopsy there were present about two litres of turbid, straw-colored fluid within the left pleural cavity. The parietal pleura was everywhere thickened, averaging 0.5 cm. on section. It was of a tough leathery consistence and grayish in color, presenting a trabeculated appearance. Scattered about were discrete nodular thickenings varying from 0.5 to 1 cm. in diameter. A few of these presented a cauliflower-like growth. The left lung was collapsed and lay close to the spinal column. A nodule of tumor growth at the level of the second rib, anteriorly, extended to the

visceral layer into the lung substance. The area of extension measured 2x1.5 cm.

Microscopically, the sections of the pleura showed an abundant connective tissue stroma and tumor cells. These were confined to the lymph vessels and lymph spaces. There was marked variation in the size and shape of the tumor cells. In the small lymph spaces they were elongated and lay end to end. In the larger lymph spaces the cells formed epithelial-like masses with an alveolar arrangement. No evidence of metastases was found other than the extension of the tumor to the lung by contiguity of surface. The term "endothelioma" was used on the ground that the lymph channels were primarily the seat of tumor growth. This resulted in the disturbance of the lymph circulation of the pleural cavity and accounted for the non-hæmorrhagic character and abundance of the pleural fluid.

**Schumacher: Thymic Stenosis and Its Pathology** (Über Thymusstenose und den Heutigen Stand ihrer Pathologie). Dissertation, 1913, Berlin.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author cites the case of a male child 10 months old who since birth had difficulty in breathing. A tumor-like swelling was noticed in the anterior part of the neck just above the sternum. There was also increased dullness in the region of the sternum and X-ray examination showed a large definite shadow in this region. The author removed two lobes of the thymus. The lower pole of the gland was left and was fastened into the cervical fascia. A microscopical examination demonstrated a hyperplasia of lymphoid tissue. The symptoms gradually disappeared, no recurrences ever occurring but it took fully four years for the patient to be entirely cured. Schumacher states that the status lymphaticus was the cause of the patient's symptoms disappearing so slowly. There is also a possibility that the enlargement of the lymph glands of the trachea and bronchi may have been partially responsible for the origin and increased dyspnoea on inspiration.

VERTH.

**Parker: Surgery of the Thymus Gland; Thymectomy.** *Am. J. Dis. Child.*, 1913, v, 89.

By Surg., Gynec. & Obst.

The author, as the result of his investigations, arrives at the following conclusions concerning the thymus gland: Many sudden deaths in infants have been caused by an enlarged thymus producing obstruction of the trachea. Frequently this is the side factor responsible for the compression, but at times enlarged tracheo-bronchial glands or spasm of the glottis is a contributing factor in producing the fatal result. Compression of the trachea is shown at autopsy by the presence of a flattened trachea associated with the enlarged thymus, and is revealed intra vitam by the bronchoscope showing the narrowed lumen of the organ, the symptoms referable to which being completely relieved by thymectomy. The diminished caliber has also been demon-



strated by intubation, only a long tube sufficing to keep the trachea open, and immediate and permanent relief following removal of the gland.

Two general types of cases are observed: the continuous type, in which the symptoms usually date from birth or soon after, with permanent dyspnoea usually present; and the intermittent type, usually of later development, in which there are longer or shorter intervals free from symptoms.

The three most important symptoms in either type are permanent dyspnoea, recurring suffocative attacks, and stridor. All three of these frequently occur together, when their presence is an imperative indication for operation. Stridor alone is not an indication for thymectomy.

The treatment is essentially surgical. Operative treatment — thymectomy — is as necessary and effective in tracheal obstruction from the thymus enlargement as tracheotomy or intubation are for obstruction higher up. It is frequently an emergency operation.

Although the accumulating evidence is strongly suggestive that the thymus gland is absolutely necessary to life and normal development in the earlier stages of growth, its operative removal in the young human subject, as far as present evidence has shown, is not fraught with the slightest untoward metabolic disturbances. This is probably due to the fact that it is never completely removed, and that the remaining portion quickly reproduces the tissues of the organ. It may also be in man, as in the lower animals, that after a certain period of growth its function is taken up by other organs, as the thyroid and spleen, and its complete removal, if it were possible, would have no baleful influence on the organism.

Of the 17 recorded deaths that occurred in thymectomized children, 4 followed a complicating tracheotomy and one an unclosed wound with drainage and infection. Four were due to infection from septic tracheo-bronchial glands. In one there was a preliminary bronchoscopy and in another there had been several unsuccessful attempts at tubage immediately preceding the operation. In three cases with incomplete histories the operator expressly stated that the deaths were not due to the operation itself. One was in a severe case of Little's disease. And finally, in two cases the deaths occurred several weeks after operation from causes remote from, if not entirely separate from, the operative procedure. In no case was the operation immediately fatal.

Intracapsular thymectomy is the only type of operation now employed. The vertical median incision terminating about 1 cm. below the upper border of the sternum is the skin incision usually employed. This is the one used in Veau's operation. The low transverse incision has been successfully employed in a few cases.

General anaesthesia is usually well borne when competently given. The operation is easily and safely performed.

C. G. GRULEE.

**Crotti: Thymus Tracheostenosis and Thymus Death; with Report of Cases.** *J. Am. M. Ass.*, 1913, lx, 571. By Surg., Gynec. & Obst.

Crotti adds two cases to the five he has previously reported. He reviews the literature on persistent thymus and its relation to exophthalmic goiter.

**CASE 1.** Advanced exophthalmic goiter in a woman aged 41, with classical symptoms. Sudden death from shock and collapse occurred during operation under local anaesthesia lasting 20 minutes. Ligation of poles had been attempted. Autopsy revealed nothing but an enlarged thymus and goiter to explain sudden death.

**CASE 2.** Baby, apparently normal, after forceps delivery. Shortly after had severe spell of dyspnoea, which passed away under ordinary measures. About eight hours later, sudden death occurred in a second attack. Autopsy revealed greatly enlarged thymus filling the entire upper part of the mediastinum and pressing the heart aorta and vena cava downward. The trachea was markedly compressed. A patent foramen ovale was present, but could not have been of etiologic importance because of the absence of symptoms at birth and between attacks.

**Physiology.** The physiological action of the thymus is unknown, but according to Klose the gland is essential to life. Some authorities claim the gland has a complementary, others an antagonistic, action to the thyroid. Transplantation of the normal gland causes no symptoms. Transplantation of hyperplastic thymus caused toxic symptoms, especially of the circulatory and nervous mechanisms.

**Pathology.** In this condition the thymus is usually very large and fills the space between the thyroid and heart. Typically the trachea is compressed at two places: first, at a point between the manubrium sterni and the first and second vertebrae; and second, especially in adults, at a point between the brachiocephalic trunk and the left common carotid. The trachea is compressed over more than one ring, and may be displaced to the right. The large vessels are displaced, especially the aorta, brachiocephalic artery, and the vena cava. The heart is displaced downward, and there is pressure on the inferior laryngeal nerve and the cardiac ganglia at the base of the heart.

**Associated pathology.** The condition has been found associated with simple and exophthalmic goiter, myxoedema, tetany, acromegaly, and enlargement of endocrines glands.

**Symptoms.** These vary greatly in the different cases. Onset is usually in the first weeks or months of life, and is not so common during and after the second year. It may be without cause, or may follow a crying spell. Dyspnoea is the most striking symptom. It varies from labored respiration to a severe choking spell, and may be constant or intermittent, with or without acute paroxysms. Between the attacks respiration may be normal. Stridor may be constant and extreme. It is usually inspiratory, but in severe cases is also expiratory. Depression of



infra- and suprasternal notches on inspiration is seen. Hyperextension of head or dorsal decubitus exaggerates the dyspnoea. Voice remains unaltered during and between the paroxysms. Veins of the neck are distended, and the face is puffed up. Child is semicomatose, heart beats violently, and fontanelle protrudes. All symptoms improve or disappear as paroxysm passes.

The cases may be divided into four groups:

Group 1. In which the children show general poor condition and vague respiratory disturbances. Sudden death may occur without aggravation of symptoms.

Group 2. New-born babies who make no attempt to breathe after difficult resuscitation; dyspnoea and stridor are marked. Death usually follows in a few minutes or hours.

Group 3. Death may occur suddenly during or after anaesthesia. There may or may not be pressure symptoms in these cases. Symptoms are tremor, weak pulse, and rapid, shallow respirations. Later, pallor and dilated pupils are present, and respirations stop first.

Group 4. Child wakes up suddenly at night, tries to stand up, pupils dilate, respirations stop, muscles stiffen, and he dies.

**Differential diagnosis.** Congenital vestibular stridor is entirely inspiratory, and its cyanosis disappears on tracheotomy. Laryngoscopic examination, when possible, shows malformation of epiglottis and larynx.

Tracheobronchial glands cause expiratory stridor only, and are not congenital. Adenoids are ruled out by careful local examination. Laryngospasm of infancy is ruled out by other signs of spasmophilic diathesis. Retrovertebral abscess, and acute laryngitis, can usually be easily ruled out. Crotti states that authorities disagree on the interrelation between the thyroid and thymus; but he concludes that hyperplastic thymus aggravates Graves' disease.

F. H. FALLS.

### TRACHEA AND LUNGS

**Tuffier: The Results of Operative Treatment of Hydatid Cysts of the Lungs** (Sur les resultats du traitement opératoire des kystes hydatiques du poumon). *Bull. et mem. Soc. de chir. de Par.*, 1913, xxxix, 168. By Journal de Chirurgie.

The author presents a man upon whom he operated five years ago for a suppurating hydatid cyst at the base of the left lung, at which time he removed the cyst and the pleura and drained the cavity. To-day this man is in perfect health, never having had any complications since his operation. X-ray examination together with auscultation proved the integrity of the lung tissue. A large non-painful scar is present at the base to the left and posteriorly on the right surface of the thorax. With this case in mind the author studies the process of healing following the operative treatment of hydatid cyst of the lung. Any one of three

methods of closing the defect from the loss of substance is possible: First, the lung alone takes part in the process of repair, the parenchyma undergoing a gradual proliferation replaces the lost tissue; The second method of repair, which takes place only after the first method has failed, is retraction of the thorax, which especially in young subjects may result in a deformity of the thorax and spinal column. The third method of repair is little known, the author having seen but one case. It consists in the epidermization of the intrapulmonary cavity (the pneumo-cutaneous fistula down into the pulmonary cavity, little by little becoming covered with the skin from the exterior, the fistulae remaining small). No appreciable functional trouble results from this last process of repair.

J. DUMONT.

### HEART AND VASCULAR SYSTEM

**Snoo: Heart Without a Right Ventricle** (Hart met ontbrekende rechter Kammer). *Nederl. Gyn. Ges.*, 1913, Jan.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Snoo demonstrated the heart of a child three weeks old with missing right ventricle and without the tricuspid valve. During life the pulse was weak, irregular and beat 220 and more. Heart murmurs could not be elicited.

STRATZ.

**Rehn: Surgery of the Heart and the Heart Sac** (Die Chirurgie des Herzens und des Herzbeutels). *Berl. klin. Wchnschr.*, 1913, I, 241.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The symptom complex of compression of the heart is pointed out for the diagnosis of injuries to the heart. There is a feeling of oppression and pains in the heart region, radiating to the left arm and the upper part of the abdomen, rigidity of the muscles in the epigastric region, swelling of the liver and marked filling of the veins of the neck, a thin thready pulse, dyspnoea, expression of anxiety and convulsions. X-ray examination and the determination of an increasing area of heart dullness by percussion are important. When the signs of pressure on the heart are not pronounced the diagnosis must be made by the signs of internal hæmorrhage. When the patient is found under conditions where operation is not possible, as, for instance, in the country, the author advises immediate puncture of the pericardial sac to reduce the symptoms of pressure on the heart, and then transportation to the hospital. In doubtful cases exploratory opening of the heart sac should be attempted without entering the pleural cavities.

The technique of pericardiotomy done in the costo-symphoid angle is described. A pericardial exudate of a serous, serofibrinous or bloody nature can be removed by repeated puncture, but pericardiotomy offers advantages even in these forms of inflammation.

In those cases in which the heart is adherent to



the heart sac and the latter with the anterior chest wall Brauer's cardiolysis is indicated (freeing the thorax in the area of adhesions by resection of the ribs).

LÄWEN.

### PHARYNX AND ŒSOPHAGUS

**Brennemann: Congenital Atresia of the Œsophagus, with Report of Three Cases.** *Am. J. Dis. Child.*, 1913, v, 143.

By Surg., Gynec. & Obst.

Brennemann reports three cases of this condition, which has been regarded as rare but which he thinks is more frequent than heretofore supposed. All three of his cases were of the common type, where the upper end of the Œsophagus ends in a blind pouch, the gastric portion opening into the trachea. The symptoms, of course, appeared immediately after birth; the length of life in his cases was  $7\frac{1}{2}$ , 8 or 9 days. The loss of weight varied from 25 to 40 per cent, nearly 75 per cent of which occurred in the first three days. Broncho-pneumonia was usually the cause of death, but starvation entered largely into the cases. The temperature in the first few days was usually increased. Sclerema was present in all of his cases.

The diagnosis is easily made from the following symptoms:

1. Characteristic return of swallowed fluid from the mouth and through the nose in jets, synchronous with the act of swallowing.
  2. The constant flow of saliva from the mouth and the presence of a frothy secretion before the nose.
  3. Alarming attacks of suffocation and cyanosis with each attempt at mouth-feeding.
  4. The attempt to pass a sound establishes the diagnosis and also the point of obstruction. The normal distance from the lips to the cardiac end of the stomach is 17 cm. in the new-born, and the minimum diameter of the Œsophagus 4 mm. (Mackenzie).
  5. The "inosculating" type can be diagnosed when the stomach is found distended with air.
- As to treatment, while one is justified in attempting any operative interference, even this cannot be expected to bring good results. C. G. GRULEE.

**Sencert: The Treatment of Cicatricial Strictures of the Œsophagus** (Le traitement des retrecissements cicatriciels de l'œsophage). *J. d. Chir.*, 1913, x, 1.  
By Surg., Gynec. & Obst.

In an important discussion of this subject in the Twenty-fifth French Congress of Surgeons (October, 1912), the widely divergent views there expressed were due, according to Sencert, to the fact that many surgeons did not have access to the aid of œsophagoscopy and that those who did have this aid failed to differentiate between strictures due to injury by foreign bodies, ulcers (scarlatinal, diphtheritic, syphilitic, etc.), or carcinoma, and the true cicatricial strictures. The latter almost always

follows the swallowing of caustic alkalis or acids, very rarely the ingestion of too hot viands. Patients of the first class rarely consult the surgeon: they go to a specialist for gradually increasing dysphagia.

It is the purpose of the author in this article to propound a purely practical treatment of burns of the Œsophagus and their sequellæ. He makes three pathological classifications of burns of the Œsophagus: First, burns of the first and second degree, limiting their action to the epithelial coat of the mucosa and producing an acute inflammation characterized by œdema of the mucosa, diffuse redness and an abundant secretion of mucus. This type disappears in a few days, leaving no trace. The second class is comparable to burns of the third degree. The chorion of the mucosa is attacked, the epithelial covering is destroyed and at the outset slough is formed. At the limits of the scar the mucosa is red, œdematous and oozing. The elimination of the slough is very rapid and reparation is commenced by invasions of the neighboring tissue followed by regeneration of epithelium. Then results the formation of contractile cicatrices which, in consequence of the attraction of the neighboring mobile mucosa towards the retracted point, leads to the formation of a fold of mucosa projecting into the lumen. These folds may take the form of circular diaphragms according to the extent of the circumference involved. In the third class, comparable to burns of the fourth, fifth and sixth degree, not only the mucosa but also the submucosa and a portion more or less important of the muscularis are from the start destroyed. At the borders of the slough there is a very intense inflammatory reaction; the mucosa is red, œdematous and stiff. It is the site of less intense burns which prolong the principal burn below but especially above. Here the elimination of the slough is slow except in rare instances in which the mucosa and submucosa cast themselves off in the form of a mould of the Œsophagus. Ulceration may be present six, eight, or ten months after the accident and during the whole time of repair the site of the ulcer is an atrium for infection of the pericœsophageal tissues. Little by little cicatrization takes place, coming to an end naturally by the production of very retractile fibrous masses, whose presence determines a "callous stricture." Almost always the entire circumference is involved. According to the length of the cicatrix it is termed "annular" or "tubular." The degree of stenosis may vary up to "complete stricture."

The œsophageal wall above the stricture undergoes important changes. If the stricture is just permeable, there results a hypertrophy of the muscularis. If the stricture is tight, and the wall above is sufficiently changed, there may be dilatation of the Œsophagus above the stricture, though Sencert believes, contrary to Guisez, that dilatation is very rare.

The position of the stricture depends upon the physiological conditions at the time of swallowing. If the act of swallowing is accompanied by a deep



inspiration, the œsophagus escapes serious injury: the stomach, particularly the pyloric end, receives the brunt of the burn, the œsophagus being injured only along the summit of the longitudinal fold of the mucosa. With the patient breathing normally at the time of swallowing, as is most often the case, the fluid collects at the closed cardia and burns a variable distance above this point before passing into the stomach or being ejected by vomiting. If only a small quantity of liquid is ingested it is stopped at the normal narrowings of the œsophagus, —e.g., aortic and bronchial stenoses. The result is a burn of the thoracic portion of the œsophagus. The author cites von Hacker's statistics which, in one hundred autopsies, give thirty-four cases of burns at the cardia, eighteen cases at the site of the aortic and bronchial stenoses. Also almost half of all cases have multiple strictures, mostly two, sometimes three or even four.

The author makes two clinical classifications according to the time at which the patient consults the surgeon for treatment.

Class 1. The patient comes with the typical history of swallowing a small quantity of caustic liquid some weeks or months before, with resulting stricture. Although by auscultation and the radiograph we can gain much confirmation for the diagnosis of stricture based on the history, it is necessary, in order to establish with precision the indications for treatment, to gain as much information as possible about the anatomical lesion. It is particularly important to differentiate a beginning carcinoma from stricture following a burn. This can only be done by means of the œsophagoscope. The author places the patient in the dorsal position and under local anæsthesia introduces the œsophagoscope.

If the initial burn is completely cicatrized, as seen through the œsophagoscope, catheterization under control of the eye gives this additional information, the permeability of the stricture, its straight or sinuous direction and its length. There are two possibilities: Either the stricture is easily permeable, the direction of the lumen renders catheterization easy (the length of the stricture is of little importance) or the stricture is impermeable or permeable with great difficulty because of the eccentricity of the orifice, or the presence of deep furrows or diverticuli; the filiform bougie advances with great difficulty and meets at each instant some resistance whose character it is impossible to tell. The therapeutic indications are very different in these two cases.

In the first case, with the stricture permeable and catheterization relatively easy, allowing inspection of the length of the stricture, its treatment may be medical or surgical.

The medical treatment consists in the employment of subcutaneous injections of thiosinamine or of fibrolysin, care being taken to suspend treatment if marked inflammatory action results. If no effect upon the stricture is noticeable after twelve injec-

tions, none is to be expected from further medication and it is necessary to turn to surgical treatment by "methods of treatment intra-œsophageal through natural channels."

These surgical methods comprise treatment by dilatation, by electrolysis and by internal œsophagotomy. Dilatation is obtained rapidly by division, which the author condemns, or progressively by means of graduated bougies. This is the method of choice. The bougies should be passed while using the œsophagoscope until size No. 16 is reached. From here on blind catheterization may be used. In the manipulations the successive bougies should pass easily without the use of force. Permanent dilatation by means of tubes left in place varying lengths of time also has its uses in cases where the stricture is not easily accessible, or where it has been hard to find and free the superior orifice. Gum bougies may be left in place forty-eight hours, rubber tubes with metal mandarins and the especially constructed tubes of d'Ebstein, von Hacker, Guisez, etc., for one half to three hours.

Electrolysis, two methods — linear and circular: The former, by which the stricture is simply cut through, is not to be compared with the latter which is carried out by means of a nickel olive. With the indifferent electrode on the thorax, a current of 12 to 15 milliamperes is turned on and the olive on the end of a sound is gently forced through the stricture. This method is indicated only when the stricture cannot be dilated by simple means, is large enough to admit the olive point and is very short.

The third method, internal œsophagotomy by means of the œsophagotome, is a blind and very dangerous proceeding and is indicated only in those very rare cases where the stricture is valvular or callous, but very short and very hard, and of course, not amenable to treatment by dilatation or electrolysis.

In those cases in which the stricture is impermeable or permeable with great difficulty an entirely different mode of attack is necessary. The first indication is "gastrostomy" which serves the double purpose of permitting the patient to be nourished and of giving access to the inferior end of the stricture. The gastrostomy should be made through the stomach wall at or above the line of the cardia, should be small and fixed high in the abdominal wall. In many cases rest of the œsophagus following this operation relieves spasm and permits a fine bougie to be introduced. Once the bougie has entered the stomach through the œsophagus, a means of dilatation absolutely under the control of the surgeon is at hand. The end of the bougie in the stomach is found and withdrawn through the gastrostomy wound by means of an endoscopic tube. Heavy silk is attached to both ends of the bougie, and whatever means of dilatation the surgeon wishes to employ may be drawn into the stricture from below. The author prefers the rubber tube, which he leaves in place ten to twelve hours, replacing it by larger and larger sizes. It is very necessary that dilata-



tion be delayed until the burn itself has healed. He claims for this method rapid, excellent results, without danger to the patient.

Unfortunately all such cases do not become permeable even after prolonged rest. Temporary cervical œsophagotomy has been done by eminent surgeons for this condition, but Sencert cannot see its justification. He substitutes "retrograde œsophagoscopy."

The technique is as follows: Patient is placed in the dorsal position, the gastric fistula is dilated to admit an œsophagoscope 8 mm. in diameter which is introduced into the empty stomach. If the cardia is difficult to find, the patient is made to drink some colored fluid. A few drops trickle through; the œsophagoscope is introduced and advanced very slowly, because where this procedure is necessary we are always dealing with a long, tubular stricture. Placing the patient in the Trendelenburg position facilitates the introduction of the instrument. The stricture once located, an attempt is made to find an opening (colored fluid again used) in order to introduce a fine bougie. If the procedure is successful the "dilatation without end" can be carried on as before mentioned. Electrolysis or internal œsophagotomy might also be done from below but are both more dangerous and less certain than dilatation.

In a very few cases will this method of retrograde œsophagoscopy fail to establish an opening. Œsophagoscopy from above and from below gives a clear idea of the nature of the stricture. If the cause of obstruction is immediately at the cardia and retrograde œsophagoscopy has failed to find an opening, the stomach may be incised eight to ten cm. and the cardia directly attacked. The author condemns forcible divulsion in these cases also, preferring a small opening through the cardia and the dilatation without end.

If all the previously mentioned methods have failed, and one is in the presence of a very long, tortuous stricture absolutely impassable from above and below, it is necessary to resort to extra-œsophageal methods which may attack the stricture direct after exposure of the œsophagus or circumvent it by a new passage for food.

There are two methods of external attack on the stricture, both applicable only to strictures of the cervical œsophagus: External œsophagotomy, indicated only with very short, very tight and impassable strictures, and the œsophagectomy after the method of von Hacker. The latter is used only in very rare cases where there is a single, very tight stricture of the cervical œsophagus which has resisted all other plans of treatment. The trans-thoracic œsophagectomy has not yet been done for cicatricial stenosis.

There are also two methods to circumvent the stricture: (1) the œsophagogastrostomy applicable to short tubular or annular strictures at the cardia and using the fundus of the stomach for the anastomosis. (2) the œsophago-jejuno-gastrostomy of

Roux, which is indicated in strictures of the thoracic œsophagus after all other methods have failed.

In summing up, the author states that if all methods of intrathoracic treatment have failed, the surgeon must resort to a palliative gastrostomy with recourse to one of the extracœsophageal methods mentioned above. If it is a stricture, high up and very short, one should do an external œsophagotomy or the œsophagectomy followed by a cutaneous plastic operation, after the method of von Hacker. In strictures low down, the author admits only one procedure,—the operation of Roux. But if the surgeon uses judgment and patience in the employment of intra-œsophageal methods, this last formidable operation will be exceedingly rare.

The second great clinical group of burns of the œsophagus consists of these cases which present themselves to the surgeon in shock immediately after the burn, or dying from hunger ten to fourteen days after the burn from inability to swallow, or after four to six weeks when dysphagia has steadily increased until the patient fears he will starve. In all these conditions the indications are the same,—no matter how much the patient begs for sounds to dilate the œsophagus, no matter what the temptation to treat the stenosis direct, no intra-œsophageal treatment is permissible until after the lapse of weeks or even months, when the œsophagoscope shows the burn itself completely healed. If this rule is not followed, many patients will die from pericœsophagitis or mediastinitis.

In a brief resumé, the author again emphasizes that in the first class of cases which consult the surgeon some months after the initial burn, the first step is to ascertain by the aid of the œsophagoscope whether or not the burn is healed. If healed, he commences by œsophagoscopic dilatation, and, if the catheterization is difficult, he gives the preference to permanent dilatation. Exceptionally, if there is a very tight and very short fibrous ring, electrolysis or internal œsophagotomy may be employed. If dilatation is impossible on account of impermeable strictures, a gastrostomy is done and the cure of the stricture is accomplished by means of dilatation without end with or without retrograde œsophagoscopy. In case these methods fail, which is very exceptional, an extra-œsophageal method of treatment must be chosen: œsophagotomy or œsophagectomy for impassable strictures in the cervical œsophagus; and for strictures of the thoracic œsophagus, in every sense impassable, the œsophago-jejuno-gastrostomy. More often the surgeon is called upon to treat the second great class in which the initial burn is not yet healed: here it is the duty of the surgeon simply to satisfy himself as to how much time has elapsed since the accident. In these cases the dysphagia and emaciation demand intervention—gastrostomy. It is not until considerable time has elapsed, when one can be sure the burn has healed, that the surgeon has the right to treat the stricture. Then one should always use the dilatation without end.

ELLIS FISCHER.



## SURGERY OF THE ABDOMEN

## ABDOMINAL WALL AND PERITONEUM

**Evler: Permanent Subcutaneous Drainage Without a Drain** (Über Dauerdrainage unter die Haut ohne Drains). *Med. Klin.*, 1913, ix, 214

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author advises permanent subcutaneous drainage in cases of ascites by making a small diastasis between the recti muscles. This is surrounded by peritoneum and reaches from the abdominal cavity to the subcutaneous tissues. It is covered with skin. The author has never seen hernia resulting in these cases. In cases of pleural effusion he makes a permanent subcutaneous drainage by means of a hole through the ribs. He uses the same method in cases of pericardial effusion. He has also had very favorable results with this method of drainage in cases of effusion of the knee joint, mucous follicles and ganglia. REINHARDT.

**Kuester: Indications and Results of Abdominal Tampon Drainage** (Indikationen und Resultate abdominaler Tampondrainage). *München. med. Wchnschr.*, 1913, ix, 241.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In fifty-five cases of 1,574 laparotomies performed at the University Clinic in Breslau, the author has performed abdominal tampon drainage and advocates this procedure for controlling parenchymatous hæmorrhage, where other remedies fail to accomplish this; he used it also in wounds of cavities with presumably escape of quantities of secretion from the wound, and finally in cases where an infection was suspected. In the latter cases a channel, which is closed towards the free peritoneum, is formed by the drainage and the wound secretion thus is led from the pelvic cavity. This drainage is unwarranted in diffuse peritonitis and ascites, because a permanent drainage cannot be effected and because the tampon would cause adhesions of the peritoneal surfaces to the surrounding structures in a very short time.

The disadvantages of the abdominal tampon drainage are the prolongation of the after-treatment and the eventual formation of hernias, which latter, however, can be prevented in many cases by suture twenty-four hours after the operation.

H. ALBRECHT.

**Danielsen: General Purulent Peritonitis Caused by a Tape-Worm** (Allgemeine eiterige Peritonitis durch Bandwurm). *München. med. Wchnschr.*, 1913, ix, 411.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports a case of general purulent peritonitis in which the intestine had been perforated. A tape-worm was found in the free abdominal cavity; its head had entered the right tube. Near the tube was found an ovarian cyst.

The explanation for these findings the author

derives from the fact that two years previously the patient had been affected with oöphoritis and salpingitis. This led to adhesion between the fimbriæ and the intestine, the pus perforating into the latter. Through this perforation the tape-worm had partially crawled. When the salpingitis healed in consequence of good drainage, the adhesions between the fimbriæ and the intestine loosened and finally gave way due to the movements of the worm. The rest of the tape-worm entered the free abdominal cavity and together with the contents of the intestine which had poured from the perforation, caused the peritonitis. A perforation of the healthy wall of the intestine by the tape-worm is not to be assumed.

ALFRED LINDEMANN.

**Ferguson: Medical Aspects of Septic Peritonitis.**

*Canad. Pract. & Rev.*, 1913, xxxviii, 69.

By Surg., Gynec. & Obst.

Peritonitis may be classified as primary, when no causative lesion is present, and secondary, when the infection is from within the body (endogenous variety) or from without (exogenous variety). The primary form occurs in about 10 per cent of all cases, with the pneumococcus responsible for 90 per cent and the staphylococcus pyogenes aureus for 8 per cent. Of the secondary form about 73 per cent are endogenous, the balance exogenous, and a great variety of organisms have been found present — *B. coli*, streptococcus, staphylococcus aureus, *B. aerogenes capsulatus*, staphylococcus albus, pneumococcus, *B. pyocyaneus*, *B. proteus*, *B. typhosus*, and the gonococcus, most frequent in the order named and usually in combination with one or more others.

In discussing the site of the initial lesion Ferguson quotes the St. Thomas Hospital statistics, which give intestinal obstruction of some variety as the cause of 39 per cent, appendicitis 37 per cent, perforations of the gastro-intestinal tract 11 per cent, pelvic organs 6 per cent, and 7 per cent presumably primary, as no lesion could be found. The location of the lesion and the form of organism has much to do with the cause of the disease. In gastric perforation pneumococci are usually found; in perforation of the small intestines, bacillus coli; and in puerperal peritonitis, streptococci. The most virulent organisms are the *B. pyocyaneus* and streptococcus, then the *B. coli*, pneumococcus, gonococcus, and staphylococcus albus, in the order named.

Bacteria may pass through injured or inflamed organs without actual perforations being present; but they alone are not sufficient to cause a peritonitis, as the defensive powers of the peritoneum may be equal to preventing it. These latter are quoted from Andrewes as being divided into physiological (which includes the fluid currents in the vessels, the antibodies, and the mesoblasts) and pathological (consisting of leucocytosis, hyperæmia and exudation).



The disease tends to be fatal at the extremes of life, and among unfavorable symptoms are a rapid pulse, low temperature, abdominal distention, and absence of leucocytosis. Of importance in prognosis is the time of operation: 90 per cent of all cases of septic peritonitis are essentially surgical, and if operation is done within 12 hours it should succeed; but if postponed 24 hours, the outlook is grave.

The treatment is essentially surgical; but when the patient is first seen, and before operation, the following treatment is suggested by Corner: Fowler position, no food, normal saline per rectum, no opiates, gastric lavage, and the education of the patient to the benefits of operation. The post-operative treatment includes continuous normal saline per rectum, vaccines and sera, artificial leucocytosis, gastric lavage for nausea, hot applications, enemata, rectal tubes and the administration of eserine, atropine or pituitary extract for abdominal distention, sinapism, enemata, lavage, sedative drugs or morphine in small amounts for hiccough, and the use of the utmost care in the resumption of feeding.

E. K. ARMSTRONG.

**Riebel: Subcutaneous Rupture of the Diaphragm and Positive Pressure; an Experimental and Clinical Study.** *Surg., Gynec. & Obst.*, 1913, xvi, 135.  
By *Surg., Gynec. & Obst.*

The mortality of subcutaneous ruptures of the diaphragm is very high. Operative treatment has so far not given good results. Riebel reports a case of a boy who sustained a rupture of the diaphragm with prolapse of the stomach into the left pleural cavity. The diagnosis of rupture was made and the boy operated on by the abdominal route three hours after the accident. On withdrawal of the stomach from the pleural cavity, respiration became quite shallow and finally ceased entirely. Direct heart massage was practiced and the heart contracted vigorously for a while, but respiration could not be re-established. With the intention of studying both the physiological side of rupture of the diaphragm and the safeguarding against terminations, as in his own case, a number of experiments on dogs were undertaken. The insufflation method of Meltzer was employed to maintain thoracic equilibrium. None of the dogs died from the immediate effects of the operation. Eight dogs in all were used. Three of these recovered and four died of infection, ranging from 3 to 10 days after operation. In four of the dogs the chest route was chosen; in the other four an abdominal incision was made. There appeared to be no difference, except that of easier access by the transpleural route. Resection of a portion of the costal arch after the method of Willy Meyer gave ideal access to tears of the diaphragm located posteriorly. It caused an extreme inspiratory position of the diaphragm and thus rendered it accessible for suturing through the abdomen.

Riebel emphasizes the sharp difference between subcutaneous and transcutaneous diaphragmatic

wound. He collected 10 cases from the literature; of these, 2 recovered after operative interference. His experiments led to the following conclusions: (1) The diaphragm in man has an important influence upon the heart action by its anatomical relation to this organ; (2) it is an important factor in the circulation by aiding venous return, especially from the abdominal cavity; (3) it plays an important part in maintaining equilibrium in the thoracic cavity; (4) rupture of the diaphragm is necessarily followed by serious disturbances of respiration and of equilibrium within the thoracic cavity; (5) the inevitable prolapse of abdominal organs, following subcutaneous rupture, still increases this condition, frequently producing a state of positive pressure in the thoracic cavity; (6) the use of differential pressure is absolutely necessary to overcome these factors; (7) it will insure better results, in these cases, permitting furthermore the choice of an abdominal or transpleural route, or both, as the occasion requires; (8) the character of pressure, whether positive or negative, is of little consequence, but the method of Meltzer is simple and can be used anywhere; (9) in cases of suspected subcutaneous rupture of the diaphragm, insufflation should be employed with low pressure before operation, to overcome the deleterious effects of disturbed intrathoracic equilibrium.

**Friedman: Hernia Adiposa.** *Ann. Surg., Phila.*, 1913, lvii, 204.  
By *Surg., Gynec. & Obst.*

A pure fat hernia is extraperitoneal in origin, is not accompanied by a peritoneal sac, and originates from the preperitoneal fat.

Three distinct conditions may be present: (a) fat hernia without true hernia sac; (b) fat hernia with sac accompanying it; and (c) lipoma of canal not giving rise to symptoms.

It is more often found in the inguinal canal in the male; in the crural canal in the female, or through a split in the linea alba, usually above the umbilicus.

As an independent condition — that is, without a true hernial sac accompanying it — fat hernia is comparatively uncommon. Usually both fatty mass (extraperitoneal) and hernia sac is present. But this is not true fat hernia and should not be termed as such.

Thorough exploration of the fat mass when present is of practical importance and value during hernia operations, because a small hernia sac may be covered over by it and overlooked. The fat mass may be prevesical fat; caution should therefore be exercised not to injure the bladder.

These fat masses may be a potent factor in causation of true hernia; they hypertrophy, stretch and weaken the muscular and fascial investment of the canal, and in herniating through the ring a process of peritoneum is dragged with it, so causing a true hernia sac.

Like a hernia, these lipomata may become either strangulated or irreducible. When they grow to large size and assume the characteristics of a



hernia, the diagnosis is difficult, especially so its differentiation from omental hernia.

In reducible fat hernias, the characteristic "doughy feel" which a lipoma gives and the fact that it is not entirely reducible may be a clue to the true nature of the condition present.

Irreducible fat hernia cannot be differentiated from irreducible omental hernia. Impulse on coughing may or may not be present in either case.

Thorough removal of all fat masses is necessary, as their presence tends to prevent proper closure of the canal by sutures, and because they undoubtedly tend to weaken the canal and so predispose to formations of true hernia.

#### Collins: Strangulated Inguinal Hernia in Early Infancy. *Ann. Surg.*, Phila., 1913, lvii, 188.

By Surg., Gynec. & Obst.

The author reports a case of his own and discusses other instances of a similar nature occurring in children under six months of age which have appeared in the literature. The case of Woodbury's, operated upon 45 hours after birth, is quoted as the youngest on record. Cases operated 11 to 19 days after birth are cited, some of them at length. The author's case was operated when 18 days old. Bloody mucous stools and fecal vomiting preceded the operation by 12 hours. The infant weighed  $4\frac{1}{2}$  pounds when operated. Recovery followed. Between 1 and 6 months of age the recorded cases are relatively less numerous, as illustrated by a table prepared from Mayer and Pettijohn reports:

	1. Mo.	2. Mos.	3. Mos.	4. Mos.	5. Mos.	6. Mos.	Total
Mayer's cases	18	17	16	9	5	7	72
Pettijohn's cases	15	17	9	5	5	8	59

There seems to be no general agreement as to the specific cause of strangulation in infants. The condition is comparatively rare, though in the last few years case reports are becoming more numerous. Statistics show the greatest frequency in the first 3 months of life. The relative frequency to that in adults is variously estimated as 1:62, 1:107, 1:108. Moynihan's tables show the condition to be most common during the first month of life, and gradually less frequent up to one year. Poorly developed infants show no tendency to spontaneous cure of an existing hernia, and there evolves a vicious circle of ill-nourishment, fretfulness, crying, and straining which aggravate the hernia.

The cardinal symptoms peculiar to infants are violent and uncontrollable screaming, recurrent vomiting (often fecal), tendency to retention of urine, constipation, and rapid collapse. The contents of the sac are most frequently the small intestine or a portion thereof. The cæcum and appendix have been found in the sac in from 7 to 20 per cent of cases; the omentum rarely. In the diagnosis, an accurate history is of importance. The possibility of an acute hydrocele or an ectopic testicle should be considered. The prognosis is good in proportion as the diagnosis is established early and the case

operated promptly. Fear of infection should not be considered a serious objection to operation when done under proper conditions. The tender age per se is no contraindication. Campbell's 305 infant operations showed 34 per cent under six months of age. The mortality should be much less than in similar cases with adults—Dowd and others believe it should be below 10 per cent, Reid believes less than 1 per cent. Taxis is dangerous, and rough handling courts disaster. With the failure of reduction by taxis, operation is imperative; death is the alternative. Gangrene is the ultimate result of unrelieved strangulation. The simplest operation is the best. The primary object should be the saving of life. Procrastination and continued insult by taxis tend to increase mortality. Rapidity of necrotic changes following embarrassed circulation, as well as early appearance of shock, demand urgent treatment. Manipulation of the sac should be tempered with care lest the delicate vas be injured. The author presents a table of 13 reported cases gleaned from the literature since 1907.

#### Phillips: Epigastric Hernia: Its Importance in the Diagnosis of Obscure Abdominal Conditions. *Cleveland M. J.*, 1913, xii, 102.

By Surg., Gynec. & Obst.

The author reviews the literature of epigastric hernia and emphasizes its importance, because the symptoms which it produces can simulate many acute and chronic diseases within the abdominal cavity. In a total of 7500 cases admitted to his medical clinic there were 42 cases of epigastric hernia, a frequency of 0.56 per cent. The proportion of males to females was five to one. The majority of cases occur during the active period of life, between 30 and 40. According to etiology, the cases may be divided into four classes: (a) congenital weakness of fascia, (b) ingrowths and preperitoneal fat into fascial defects, (c) trauma, and (d) chronic strain, such as cough, vomiting, sneezing, pregnancy. From the standpoint of pathology, in 38 cases described by Thomas he found fat alone in 6 cases, peritoneum in 2, omentum in 26, and intestine in 4. In rare cases they may contain part of the stomach or transverse colon. Occasionally strangulation occurs. The hernia is usually the size of a hickory nut and situated in the median line, but in one case reported by the author the hernia projected three inches above the level of the surface of the abdomen and the diameter at the base was  $4\frac{1}{2}$  inches. Many patients have no symptoms. The chief symptom is pain in the epigastrium, referred to bladder, testicles, rectum or to chest and arms, and increased by bending backward, kneeling, or jarring. Other symptoms are heartburn, eructations of gas, vomiting, flatulency, palpitation of heart, constipation or occasionally diarrhoea, headache and dizziness. The dictum of Rector over a century ago should be emphasized: "Do not forget that small hidden hernia may cause all varieties of stomach symptoms." In the majority of cases



gastric analysis shows hyperacidity. The diagnosis is usually easily made by inspection and palpation. They show more plainly if the patient is asked to strain or to raise his head from the pillow, or by coughing. To differentiate hernia proper from fatty tumor, Litten states that if the hand is placed over the mass while the patient coughs the observer gets the impression as if water were being squirted through against the hand in hernia proper, but not in tumor. Epigastric hernia may be confused with nervous dyspepsia, gastric and duodenal ulcer, cholelithiasis, cholecystitis, nephrolithiasis; rarely with gastric carcinoma, angina pectoris, gastric crises of tabes or colitis. Operation is the only effective treatment and gives good results.

**Vogel: Diaphragmatic Hernia, with Report of a Case.** *Am. J. M. Sc.*, 1913, cxlv, 206.

By Surg., Gynec. & Obst.

According to Vogel, the condition is much commoner than the number of published cases would lead one to suppose, for even the most extreme types may give rise to no subjective symptoms and are revealed only as post-mortem surprises. The advent of radiography has rendered the study of intrathoracic conditions much more effective, and it is now possible not only to determine the presence of a diaphragmatic hernia with certainty, but in many instances to ascertain its exact nature.

He classifies diaphragmatic hernias as follows:

1. True hernias: (A) True congenital hernias in which pleura and peritoneum form the sac and only the muscular or tendinous layer of the diaphragm is absent; (B) true acquired hernias: (a) true typical acquired hernias with the ring originating at one of the natural foramina; (b) true typical acquired hernias with the ring developing in a situation other than at one of the natural foramina.

2. False hernias: (a) Congenital false hernia through a congenital defect; (b) acquired false hernia due to traumatic perforation of the diaphragm, and either acute or chronic.

3. Diaphragmatic eventration due to relaxation of the diaphragm, and either involving an entire half of the diaphragm or localized in the form of a diverticulum.

The diagnosis of this condition is often beset with many difficulties, especially in congenital defects, which frequently give rise to symptoms only late in life, often as the result of apparently negligible inciting causes, such as dancing, exertion, exposure or loss of flesh.

The physical signs in cases in which the hernia is large are usually significant and often conclusive. A displacement of the heart to the right is very common and should always lead to suspicion of some form of diaphragmatic hernia if the more usual causes of dextrocardia can be excluded. The Röntgen ray is by far the most reliable diagnostic aid.

Differential diagnosis must be made from such conditions as pneumothorax, subphrenic abscess,

subphrenic pyopneumothorax, and œsophageal diverticulum. Hæmatemesis, incarceration, volvulus, and strangulation are the most dangerous complications.

As far as treatment is concerned, it may be stated of the traumatic hernias that as soon as the existence of a fresh wound of the diaphragm is ascertained immediate operation by abdominal or pleural route is indicated; in some cases the combined route. In chronic hernias the treatment is entirely directed to prophylaxis of incarceration by attention to diet and avoidance of vomiting and constipation; pregnancy is to be prevented. Surgery is indicated only in case incarceration occurs.

Vogel's case was an extreme instance of congenital diaphragmatic hernia existing without subjective symptoms. The left chest was filled with omentum, caput coli, transverse and descending colon; a few inches of the ileum were lying above the diaphragm.

R. W. McNEALY.

**Gillespie: Treatment of Gangrenous Hernia by the Combined Anastomosis and Fistula Operation.** *Practitioner*, 1913, xc, 455.

By Surg., Gynec. & Obst.

In the effort to further lower the mortality after operation for gangrenous hernia, the author suggests a "combined anastomosis and fistula operation" which he believes to be of greater value than either of the previous methods of procedure—the immediate anastomosis after wide resection, or the resection with a temporary fistula and a later anastomosis.

After resection of the intestine the lower open end of the gut is closed and 4 or 5 inches is measured off from the end of the upper portion, this marking the site of anastomosis, while the measured section forms the "tail" of the fistula. A lateral anastomosis is now made, then a rubber tube is introduced into the "tail" until it lies about 3 inches beyond the anastomosis, the "tail" and the tube being brought to the surface and fixed there. The intestines are thus drained for 3 or 4 days through a colotomy tube attached to the tubing in the fistula, at the end of which time the tubing is withdrawn beyond the anastomosis. The second stage is merely a plastic operation to close the fistula.

The main advantages of this method are: (1) It is not necessary to resect so much of the intestines. (2) The fistula does away with the results of the temporary obstruction caused by the anastomosis and the distention, drainage being free until the normally descending peristalsis of the gut is resumed. (3) Food may be given early, as the lack of obstruction prevents overloading of the intestine. (4) The anastomosis is kept at rest until the suture line is sealed.

The disadvantages are that a second operation is necessary, and the irritation of the skin which often follows a delayed closure of the fistula, but this may be prevented by proper attention.

E. K. ARMSTRONG.



**Cunéo: Wounds of the Lesser Colic Artery During Operations on the Stomach** (Sur la blessure de l'artère colique moyenne au cours des opérations sur l'estomac). *Bull. et mem. Soc. de chir. de Par.*, 1913, xxxix, 174.  
By Journal de Chirurgie.

Cunéo states that injury to the lesser colic artery is not rare in stomach surgery; it is not infrequently injured in gastrectomies and occasionally in gastro-enterostomies.

From the reports of cases in which this artery was injured, it seems that consequences from its ligation are not to be greatly feared. Cunéo reports two cases of ligation of the lesser colic artery which he performed on account of injury to the artery in a gastrectomy and in a gastro-enterostomy. In the first of these cases, the wound was due to an anomaly in the artery; in the second to faulty technique (seizing the artery with a toothed forceps). In both cases trouble ensued.

Generally this ligation causes gangrene of the colon, which, however, is not necessarily fatal, as these two cases and others in the literature show. From this it seems that ligation of the lesser colic artery is not necessarily followed by serious consequences. On the other hand when this ligation is accompanied by tearing of the mesentery or its separation, gangrene of the colon is of frequent enough occurrence to justify a colectomy.

Ombredanne found among other lesions in a man stabbed in the abdomen by a poniard, a rupture of the right main colic artery which was bleeding freely. He ligated both ends of the artery and obtained an ischemia of the whole ascending colon and so apparently a grave prognosis. But contrary to his expectation, the wound healed without trouble. This is an observation to add to those of Cunéo and goes to show that the great vessels of the colon can be ligated near their origin with less damage than would be expected from the anatomy of the part.  
J. DUMONT.

#### GASTRO-INTESTINAL TRACT

**Dehn: Spasmodic Condition of Stomach and Intestine as Seen by the X-Ray** (Über krampfartige Zustände des Magens und des Darmes vom röntgenologischen Standpunkte aus). *Russk. Vrach.*, 1913, xii, 80.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A stasis of the contents of any part of the gastrointestinal tract can at times be observed due to spasmodic contraction of the gut below. The first portion of bismuth paste is sometimes held for hours near the cardiac end of the stomach. The fundus of the stomach below the engorgement appears to be so much constricted that food can not pass to the pyloric end. Such observations of spasm of the stomach have been observed in cases of neurasthenics suffering from catarrhal conditions of the stomach. It can also be observed in ulcers of the duodenum. Such spasms occur, not infrequently, in cases of gastro-enterostomy for ulcer of duodenum,

and may result seriously. Spasms of the stomach can bring about very serious disturbances because the lumen of the stomach is obliterated just above the place where anastomosis is made. Spasmodic contraction of the small intestine has not been studied very much so far. On the other hand much has been written about spasmodic contractions of the large intestine particularly in its relation to constipation which results from it. In such a case the X-ray shows that the large intestine appears from two to three times smaller than normal.

JAFFE.

**Sequinot: The Necessity for the Exclusion of the Pylorus as a Complementary Step in Gastro-enterostomy and a New Procedure for Exclusion of Ulcer of the Duodenum** (De la necessite de la gastro-entérostomie et d'un nouveau procédé d'exclusion dans l'ulcère du duodénum). *These de doct.*, Paris, 1913, Jan.  
By Journal de Chirurgie.

The author, after having shown the insufficiency of gastro-enterostomy in all cases where a true stricture of the pylorus did not exist, and after having shown the advantages of exclusion of the pylorus, gives a description of a new procedure. "The wall of the duodenum is held between the thumb and the index finger of the left hand and a transverse fold is made. With the right hand a sero-muscular suture is placed, guiding the needle with the fingers of the left hand in such a way as to encircle the duodenum and bring the needle out at the point of entrance. A second row of sutures, of No. 2 silk, is passed in the opposite direction in such a way as to bury the first row. Thus the duodenal wall is plaited in such a way as to obstruct the lumen."

This method has been adopted in three instances. One patient died the following day from an attack of angina pectoris. The two other operations were successful and the patients examined at a recent date had greatly improved.  
J. L. ROUX-BERGER.

**Houdard: Simple Ulcer of the Duodenum, Without Perforation** (L'ulcère simple du duodénum, non perforé). *These de doct.*, Paris, 1913, Jan.

By Journal de Chirurgie.

This article gives an excellent exposition of the question of juxta-pyloric ulcers in general and of duodenal ulcer in particular. It was based upon seventeen personal observations from the service of Prof. Hartmann. There are several interesting illustrations, reproductions of pathological specimens, and dissections of the veins of the pyloric region.

The author concludes from his observations that though duodenal ulcer may give the clinical picture which Moynihan has described, this picture is really a pyloric syndrome which likewise may result from the juxta-pyloric ulcers of the stomach. In other cases, the syndrome is more or less disassociated and the ulcer gives a clinical picture more vague and indefinite, and sometimes wholly latent. To a



certain extent, the symptomatology may depend upon the distance of the ulcer from the pylorus; but this is not absolute, since certain ulcers, well removed from the pylorus, give rise to the pyloric syndrome, while others yield only some of these symptoms.

Houdard believes that the co-existence of duodenal and gastric ulcers is rather frequent and partly explains the indefiniteness of the symptoms. The diagnosis of duodenal ulcer is still quite difficult, and usually can be made only by exclusion. From the point of view of treatment, the author believes that gastro-enterostomy gives good results and does not judge that in simple cases it is necessary to exclude the pylorus. If bleeding is sudden, abundant, and is causing immediate danger to life, operation is contra-indicated. On the other hand, intervention is indicated in the cases of hæmorrhages which by their frequent repetition are a menace. In these cases, gastro-enterostomy gives satisfactory results.

Houdard performed twenty dissections of injected subjects, and in only five cases did he find the venous anastomosis which constitutes the prepyloric vein. Four times this vein was on the duodenum, once it was close to the pylorus on the gastric side. The most usual arrangement of the veins was in the nature of a spray of branches spread over the anterior surface of the pyloric duodenal segment. The author states that "there is nothing in the arrangement of the veins of this region which could serve to localize the site of the pylorus, and such veins as are apparent without dissection (as one sees them in operation) on the anterior surface of the pyloro-duodenal segment offer no surgical landmark of constant existence or easy recognition."

J. L. ROUX-BERGER.

**Röpke: Operative Treatment of an Injury to the Duodenum Caused by Blunt Force** (Über die operative Behandlung der durch stumpfe Gewalt entstandenen Duodenalverletzungen). *Arch. f. klin. Chir.*, 1913, c, 295.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports a case of lesion of the ascending part of the duodenum with marked mutilation and a curling up of the serosa and muscularis of both ends, in which two hours after the injury he performed a median laparotomy, with uneventful recovery. The injury to the intestine could be exposed only after pulling apart the edges of a tear through the root of the mesentery immediately above the mesenteric vein and artery. After trimming off the tattered edges up to the sound gut, the proximal end was anastomosed laterally with the jejunum, while the distal end was drawn under the plica duodeno jejunalis and then inserted into the posterior wall of the stomach. After carefully washing out the abdominal cavity and suturing the tear in the mesentery, he closed the abdominal wall completely. Finally he made a fæcal fistula, in order to incite peristalsis with lavage of the intestine and for the introduction of nourishing enemas. There

are in the literature several cases in which the lesion of the duodenum remained undiscovered, even during the operation. Suspicion of an injury to the duodenum is aroused by a localized particularly severe pain to the right of and below the umbilicus, whose presence can often be determined by a tenderness on pressure, as in a perforation of a duodenal ulcer. It must be remembered that in rupture of the duodenum gas and intestinal content need not be present in the abdominal cavity, especially when the mesocolon and the radix mesenterii remain uninjured. Occasionally there is in the area of injury an accumulation of fluid which forms a tumor-like swelling of the mesocolon, which can be palpated before operation through the abdominal wall. To get at a retroperitoneal duodenal injury Röpke advises, unless contraindicated by accumulations of blood or pus, a mobilization of the duodenum according to Kocher. If this does not suffice a passage can be made, without particular injury to the vessels, between the root of the mesentery and the mesocolon, instead of making an unreliable direct suture which results in a difficult passage. The proximal end should be united with a loop of the jejunum, while the distal end should be fixed to the stomach.

NEUPERT.

**Bunting and Jones: Intestinal Obstruction in the Rabbit.** *J. Exp. Med.*, 1913, xvii, 192.

By Surg., Gynec. & Obst.

The study of the cause of death in high intestinal obstruction has led to no unanimity of opinion. Bunting and Jones used the rabbit for experimental work, because the long loop of the duodenum between the points of entrance of the bile duct and the pancreatic duct makes easy the cutting out of these secretions from the duodenum, so that the unmixing secretion of the duodenal mucosa may be studied.

Duodenal obstruction 25 cm. from the pylorus produced death in less than 20 hours. Death followed obstruction of the upper ileum in 40 hours. Ligation below the cæcum caused death in 11 days. That death in these cases was not due to bile or pancreatic secretion was shown by ligating the ducts. Ligation of the pylorus produced death in 36 to 48 hours.

That death is not due to lack of duodenal secretion is proved by the fact that death follows excision of the duodenal loop in the same time as after simple pyloric ligation. The contents of the closed duodenal loop is shown to be toxic by injection experiments. Intraperitoneal injection of 20 cc. kills a 1000 g. rabbit in less than 20 hours, with many of the symptoms seen in obstruction cases. It is improbable that this toxin is bacterial in origin, because of the great variance in intestinal flora and the constancy of the symptoms. It seems apparent from the above experiments that about 10 cm. of duodenum must lie above the obstruction in order that sufficient toxin be secreted to kill in 24 hours or less. And further, it seems that in low ligation



about 100 cm. of intestine below the duodenum is necessary to overcome this rapidly fatal effect. It should be possible to save the life of the animal by duodenostomy, but, owing probably to faulty technique, this procedure was not successful.

JAMES F. CHURCHILL.

**Forssner: Pathogenesis of Congenital Atresia of the Intestines** (De medfödda tarmatresiernas patogenes). *Allm. sven. Läkart.*, 1913, x, 36.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author found a thickened epithelium in the bowel of an embryo 29 mm. long, especially in its cranial portion, which crossed the lumen immediately beneath the duodenum in thick irregular bands. At several places the mesoderm grew into these bands far to the center, and at one place these cones met from three different sides so that the mesoderm of one side continued into that of the other. This finding confirms the author's view that the origin of congenital atresia consists in hyperplastic development of mesoderm cones which, according to Johnson, represent the earlier stages in the formation of villi. These atresias, therefore, are not to be considered as arrests in the development of epithelial occlusions.

BJÖRKENHEIM.

**Bollag: Arteriomesenteric Occlusion of the Intestine** (Zur Kenntnis des arteriomesenterialen Darmverschlusses). *Cor.-Bl. f. schwed. Ärzte*, 1913, xliii, 262.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient presented the following clinical picture while confined to her bed for a fracture of the femur: continued vomiting, and enormous enlargement of the stomach, which succussion-splashes showed to be still filled with liquid matter (making a positive diagnosis possible even before the operation), while the abdomen was otherwise soft and presented no signs of tumor. The operation revealed an enormously enlarged stomach that reached almost down to the symphysis. There were no signs of hour-glass formation. The pylorus was normal, with a free passage the width of two fingers, and presented no pathological changes on its surface. The superior portion of the duodenum was enormously dilated up to the point where the radix mesenterii crosses the inferior portion of the pars horizont. inf. duodeni. Below the radix jejunum it was atrophic, flaccid, and collapsed. As the radix was raised the jejunum at once filled with air and liquid matter. Gastro-enterostomy was not attempted and further operative measures were confined to emptying the contents of the stomach and the duodenum into the unaffected sections of the intestine and relieving the tension of the radix as much as possible by raising the lower flexures of the intestines. Six days later there was a recurrence of intestinal occlusion and the patient succumbed.

It should be mentioned that the report of the operation calls attention to the presence of a

marked lordosis of the spinal column, at the level of the pylorus and extending to the sixth rib. Just above the highest point of the lordosis the radix mesenterii branches off. It is this lordosis which the author holds responsible for the development of the chronic and periodically recurrent arteriomesenteric intestinal occlusion.

SIMON.

**DeRouville and Roger: Multiple Ulceration and Perforation of the Small Intestine and Cæcum from Virulent Post-operative Intestinal Intoxication** (Ulcérations et perforations multiples de l'intestin grele et du cæcum par toxo-infection intestinale suraiguë post-opératoire). *Arch. d. mal. d. l'appar. dig. e. d. l. nutr.*, 1913, vii, 24.

By Journal de Chirurgie.

The patient was a woman, 45 years of age, who had been treated without success for sclerosis of the uterus and hæmorrhage and who had had an abdominal hysterectomy performed. The immediate results of the operation were good, but when the patient was considered to have recovered from the operation (eighteen days following) she was suddenly seized with acute abdominal pain accompanied with marked diarrhœa. The pulse became accelerated and the temperature did not fall below 38°. The picture was that of typhoid fever, but the symptoms became aggravated and the patient died five days after the onset of the acute symptoms.

Autopsy showed omental and intestinal adhesions which shut off purulent collections of fluid from the free abdominal cavity. The last part of the small intestine and the cæcum were discolored and contained about fifteen perforations. These lay on the wall opposite the mesenteric attachment; the mesenteric vessels were not dilated. On the mucous surface the perforation did not occupy Peyer's patches.

Microscopic examination showed the ulcerations to be secondary to a process of fatty degeneration, and that they were filled with micro-organisms of bacillary form. These bacilli also occupied the lumina of the blood vessels in the neighboring tissues but in none of these places was there any thrombosis.

The authors were at a loss as to the cause of these lesions: the absence of arterial thrombosis eliminated the hypothesis of thrombosis of the mesenteric vessels. The process was undoubtedly that of an acute diffuse enteritis, which could be likened neither to a case of sublimate poisoning or uremia, nor could it be due to an extra-intestinal infection. One should consider typhoid fever as a possibility, but the ulcerations did not occur on Peyer's patches, and their form was transverse. The authors arrived at the hypothesis of an infectious enteritis originating from the blood stream as the microbic embolisms of the neighboring blood vessels would seem to show. Whether the origin of this infection was from the operation or independent thereof this study does not permit one to say.

J. OKINCZYC.



**Schmilinsky: Re-introduction of Bile and the Contents of High Fistulæ of the Small Intestine Into the Human Economy Through the Stomach and the Colon** (Über die Verwertung von Fistelgalle und Dünndarminhalt aus hohen Dünndarmfisteln im Haushalt des Organismus). *Zentralbl. f. Chir.*, 1912, xxxix, 1667.

By Surg., Gynec. & Obst.

In a case of hour-glass stomach with ulcer, treated by resection and closure of duodenum and stomach with subsequent gastrojejunostomy, a pancreatitis followed, probably due to excessive cauterization of the base of the ulcer which located in the pancreas. An abscess followed which was evacuated. Later pure bile in amounts of 800-1000 cc. per day was discharged, due to occlusion of the duodenum below the papilla through the inflammatory process and a giving way of the duodenal suture. Emaciation of the patient was rapid and progressive. Schmilinsky re-introduced 400 cc. of the collected bile into the stomach twice daily through a tube and succeeded in improving the patient to such a degree that he was able to anastomose the duodenum with a loop of small intestine two months later and cure his patient.

In a second case, one of ileus, an enterostomy had been performed. Conditions did not permit the use of a lower loop of bowel. In consequence rapid emaciation soon followed this high intestinal fistula. Four days later a Witzel fistula was made in the transverse colon, a rubber tube introduced into this and the discharge from the other fistula after thorough trituration introduced into the colon by injection. The large bowel stood the injections well. The stools evacuated per rectum were of firm consistency. Corresponding to insufficient absorption the stools contained a greater amount of fat than usual. The condition of the patient improved at once, so that the fistulæ could be closed after a few days. The author thinks that this method is more certain than nutrient enemata. He thinks that introduction of the contents of high fistulæ of the small intestine may lead to irritation of the rectum, as this portion of the intestine is not accustomed to the strong action of the pancreatic juice. He suggests that if occasion demand a high enterostomy to make a colon fistula at the same time, the condition of the patient permitting. He had the opportunity to do this in a patient a few days after finishing his paper. Cholecystectomy with removal of a common duct-stone and drainage of the hepatic duct had been performed. Through a new incision a Witzel fistula of the jejunum was made and a tube introduced. The patient receives daily 500 cc. of the secreted bile through this tube. She was much reduced before operation and is now in good condition. The patient in the first case would have succumbed without this feeding of bile. The entire output of bile was evidently discharged through the duodenal openings, a loss but incompletely compensated by ingestion of abundant liquid and solid nourishment.

E. C. RIEBEL.

**Aaron: A Sign Indicative of Chronic Appendicitis.** *J. Am. M. Ass.*, 1913, lx, 350.

By Surg., Gynec. & Obst.

Aaron regards referred pain or distress induced by continuous pressure over McBurney's point as a most valuable diagnostic sign of chronic appendicitis. In many cases of chronic appendicitis with digestive symptoms he has induced referred pain or distress in the epigastrium, left hypochondrium, umbilical, left inguinal, or precordial region by continuous firm pressure over the appendix. All of these cases on whom appendectomy was performed have fully recovered from their digestive trouble.

The digestive symptoms were caused by impingement on the nerves, which reflexly induced a perversion in gastric secretion. The appendix has a rich nerve connection from the superior mesenteric plexus of the sympathetic with the cardiac, hepatic and gastric plexuses.

L. G. DWAN.

**Owen: Appendicitis; a Plea for Immediate Operation.** *Lancet*, Lond., 1913, clxxxiv, 441.

By Surg., Gynec. & Obst.

The author says that appendicitis is different from most other acute diseases in this, that one cannot tell exactly what is the state of affairs without making an incision, and that no part of the body has caused so many surgical surprises as the appendix. The commonest surprise of all is the discovery of a perforated appendix when the symptoms have been slight and the operation has by good fortune been undertaken early. In discussing the so-called quiet stage he thinks that no one can possibly tell whether in any individual case the symptoms are going to subside or rush forward with hurricane speed. He believes that the golden age in surgery will have begun to dawn when the family doctor, the physician, and the surgeon all agree that as soon as ever the diagnosis is made that an appendix is inflamed, it should be removed, and that if there is doubt about the diagnosis it should be settled by an exploratory incision. The public should be enlightened and be made to understand that it is not the operation but the delay in performing it to which a fatal result should be generally attributed. He compares in a very instructive way an imaginary series of 200 cases, half of which were operated on and in the other half no operation was performed. He reminds us that there may be a comparative absence of clinical signs in the presence of advanced and perilous disease in the appendix. He says an inflamed appendix is a shell with a lighted time fuse, and though in any case it may happily fail to explode, it is far safer to lift it out at once and drop it overboard.

DONALD C. BALFOUR.

**Green: Appendicitis During Childhood** (Über Appendicitis im Kindesalter). *Allg. Wien. med. Zeit.*, 1913, lviii, 13.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Appendicitis is uncommon during the first two years of life and is more frequent after the fifth year.



The lymphoid tissue in the appendix is not functionless in childhood. Therefore the removal of a healthy appendix during an abdominal operation is not advisable. The causes of this disease during childhood are the same as those in the adults: stenosis, foreign bodies, kinking, tuberculosis, typhoid, and worms. The latter is a cause in children more frequently than is supposed. Green found them in 31 per cent of his cases of appendicitis. The symptoms commonly found are like those of the adult. The unusual accompanying symptoms are cystitis, or melæna. The latter was observed in a child 14 months old and could be traced to the marked congestion of the intestines. The diagnosis of acute appendicitis in children is often most difficult. The course is usually a quick one and the mortality rises rapidly from the second to the sixth day. In a differential diagnosis must be considered: pneumonia or right-sided pleurisy, acute gastritis, intussusception, intestinal obstruction, typhoid, Henoch's purpura and disease of the right ovary. The prognosis is very uncertain in children and depends on the virulence of the infection and the method of treatment. In treatment each case should be regarded individually. In general all acute cases which are seen within the first 48 hours should be operated immediately. After 48 hours operation is advised only when the condition becomes progressively worse or in case of a perforation; abscesses should be opened immediately.

V. KHAUTZ.

**Dobbertin: Length of Incision and Abdominal Irrigation for Combating Paralysis of Intestine in Appendicitis-peritonitis** (Schnittlänge, Bauchspülung, Bekämpfung der Darmlähmung bei Appendicitis-Peritonitis). *Deutsche med. Wchschr.*, 1913, xxix, 222.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Dobbertin uses in all cases of acute, intermediate and peritonic appendicitis Riedel's undulating incision, the length of which he has reduced to 4-5 cm. In early operations and in operations between attacks he considers an incision of 3-4 cm. sufficient. He warmly advocates the primary extirpation of the appendix also in cases with callosity or induration. In early operations the peritoneum is opened from the front, i.e., directly below the interstitial spaces of the muscles; in the intermedial stage, however, the peritoneum is opened from behind, penetrating backwards to the colon in order to avoid the free abdominal cavity. The rule for the treatment of diffuse peritonic appendicitis is abdominal irrigation from a small abdominal incision. The abdominal wall is lifted up on the median border with Kocher's retractor and under guidance of the left forefinger a glass tube (40 cm. long, resembling a vaginal douche point, and perforated centrally at its end) is pushed forward into the small pelvis, then subhepatically, subphrenically and finally into the left hypochondrium and into the lumbar cavities. Not less than 20 liter should be used for the

irrigation under a pressure of a height of at least 2 m. After the drainage, he places a small pouch tampon; after 24 to 48 hours this tampon is removed and the wound closed with secondary suture.

In fibrinous decapsulating peritonitis multiple incisions are necessary. In all cases greatest care should be taken to avoid eventration.

In peritonic paralysis of the intestine an injection of 25-50 ccm. glycerine into the cæcum or a loop of the intestines located higher has given the very best results and was often life saving in desperate cases where all other remedies failed to incite peristalsis. In order to facilitate the injection in severe cases, the author arranges the tampon in such manner as to allow the cæcum to lie in front. If no flatus has passed within forty-eight hours after the operation in spite of adequate help, if the abdomen swells, if no peristalsis can be heard, if there is nausea and vomiting, the author makes an injection of 25 ccm. glycerine from a record syringe with a fine hollow needle through the cæcal wall into the intestine and he has had the very best results with this method in the majority of cases. EBELIS.

**Tuffier: Angioma of the Sigmoid** (Angiome de l'Siliaque). *Bull. et mem. Soc. de chir. de Par.*, 1913, xxxix, 268. By Journal de Chirurgie.

The author reports the case of a man of 31 years who seven years ago had a sudden intestinal hæmorrhage (a glass full of red blood). In the following days there were repeated hæmorrhages until the patient became profoundly anæmic. The bleeding then stopped spontaneously and did not reappear for three months. These hæmorrhagic crises were repeated four to ten times yearly, the man remaining quite well during the intervals. He was admitted twice to hospitals where he was treated as a case of pernicious anæmia with successive relapses. He entered the service of the author in September, 1911. Sigmoidoscopy showed a small tumor in the lower portion of the sigmoid. The growth was the size of a small pea, purplish in color, and very slightly ulcerated. It was situated twenty-two cm. above the anus. On its surface were several very small clots. After these had been swabbed off a nævus-like appearance was disclosed. There was no visible oozing. The growth was cauterized. Fifteen months later, the patient re-entered the hospital in a very precarious condition due to renewal of the hæmorrhages. At his request, the author performed laparotomy and explored the intestinal tract without, however, finding any alteration nor any tumor. The spleen, which had been enlarged, proved to be of normal size. The patient's condition became worse, and a few days later he died.

At autopsy, the only explanation of the hæmorrhages found consisted of two angiomas of the sigmoid. These were bright red, pea sized, submucous nodules showing no trace of recent rupture. A few hæmorrhoids were visible, but they were of small size and none appeared ulcerated. There was no ulceration or erosion of the intestinal mucosa



in the whole course of the small and large intestines. Two small submucous angiomas were found in the mouth; one on the lower lip at the right, and the other on the floor of the mouth. This case led the author to collect the rare similar instances of angiomas of the intestines recorded in the literature.

In *structure* these tumors are entirely similar to other angiomas.

*Topographically*, they are distributed more commonly in the small intestine, but rarely in the large. They may be single, or multiple in an area of 20 centimeters to 2 meters, or generalized. They are often the site of a thrombus and sometimes pedunculated.

*Clinically*, their evolution may give rise to no symptoms whatsoever, their discovery occurring only as an incidental finding at autopsy following some other affection. Rarely they may cause obstruction. Their chief and only symptom is hæmorrhage, which may be of three grades: first, profuse; second, abundant; third, occult.

It is evident that when these venous ectasis are situated in the jejunum or are generalized they are beyond our means of intervention, but when the clinical character of the hæmorrhages lead to the supposition that their site is relatively low down in the intestinal tract, as in the colon or sigmoid, direct and repeated examination should be made, and if a small tumor of angiomatous appearance is found in the sigmoid its removal may lead to cessation of the hæmorrhages and thus save the patient's life. Hartmann has observed two cases of angiomas of the digestive tract. In the first case, a woman 22 years old, had had intestinal hæmorrhages. These at first had been attributed to hæmorrhoids, but the history led to the suspicion of a different type of lesion. In this case the blood preceded defecations, while in hæmorrhoids blood is passed after the stool. Proctoscopy showed a small angioma which bled at the slightest touch. It was situated in the ampulla just above the lowest valvular fold. Cauterization with the galvano-cautery was followed by healing.

The second case was that of a patient who suffered from repeated hæmatemesis. There were absolutely no other symptoms of ulcer of the stomach, no hyperchlorhydria, no pain. The repeated hæmorrhages at length led the surgeon to an exploratory operation. When the stomach was drawn into view, it was observed that along the course of the branches of the arterial supply, there was a series of small red pea-sized angiomas, which had all the characteristics attributed to arterial angioma. It therefore seemed very probable that similar growths were present on the mucous surface, but in view of their multiplicity and the lack of knowledge as to their exact location their removal appeared impossible, or at least very dangerous. The author, therefore, limited himself to the ligation of the two branches of the gastric coronary artery. Six and a half months after the operation, the patient reported that there had been no further hæmatemesis and that her general health was excellent.

J. DUMONT.

**Mayo: Some of the Disputed Problems Associated with Surgery of the Large Intestine.** *Am. J. M. Sc.*, 1913, cxlv, 157. By Surg., Gynec. & Obst.

Because of the high fixation of the splenic flexure the contents in the first half of the large intestine are detained in the area of absorption. Beyond the splenic flexure there is but little absorption; the sigmoid, like the urinary bladder, is a storage chamber. The descending colon is usually empty, and for this reason is often supposed to be strictured, as shown in X-ray pictures. The rectosigmoid juncture is a peculiar mechanical arrangement which holds the faecal accumulation in the sigmoid. The rectum is normally empty, except during defecation. Material placed in the rectum is quickly carried to the head of the colon for absorption. Tumors of the cæcum and ascending colon are often accompanied by metabolic changes, i.e. profound anæmia, etc., which is not true of tumors of the large intestine beyond the splenic flexure. The terminal foot of the ileum rises out of the pelvis and enters the cæcum obliquely, not at right angles, and is held by a peritoneal fold of which "Lane's kink" is an exaggeration. The cæcum and ascending colon are functionally one organ, the cæcum itself being only from  $1\frac{3}{4}$  to 3 inches in length. The cæcum and ascending colon do not arrive at their normal position until after birth, and its peritoneal attachments, if exaggerated, produce the "Jackson's veil." The transverse colon is 22 inches in length, and has 11 inches to travel from the hepatic to the splenic flexure. Its support in the center is the movable stomach, and there must, therefore, be some degree of prolapse. The sigmoid varies greatly in size and position, and its holding bands of peritoneum, when they are pronounced, are often called "kinks." Bands, developmental in origin, are often formed between the gall-bladder and duodenum, between the pyloric end of the stomach and the posterior wall of the lesser cavity of the peritoneum. Functional disorders of the large intestine, especially in the cæcum and ascending colon, may disturb metabolism through absorption of deleterious products, and produce conditions which are variously called intestinal putrefaction, intestinal stasis, etc. It is possible that mechanical conditions of developmental origin have some effect in detaining infected remnants of food too long in the absorbing half of the colon and that the symptoms are due to the effect of toxic products on the controlling sympathetic ganglia. Credit is due Jackson, Coffey, Lane, Martin, Rövsing and others for their work.

**Vidakovich: Causes of Prolapse of the Rectum and the Influence of the Bladder and Intra-Abdominal Pressure on the Production of Same** (A végbélelőésés okairól és a húgyhólyag és hasprés befolyásáról a végbélelőésés létrejövésére). *Orvosi Hetilap*, 1913, lvii, 79.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author regards a full bladder as a powerful protection against prolapse of the rectum. By filling



the bladder the small intestines which transmit the pressure of the abdominal muscles are lifted out of the pelvis and the fold of Douglas is raised. The rectum is pressed into the convexity of the sacrum and thus its convolutions are increased and finally the opening of the pelvis is closed by the distended bladder and the force of the pressure of the abdominal muscles is dispersed in various directions. He can prove through direct manometrical measurements that pressure from the abdominal muscles transmitted to the part of the rectum below the bladder is less when the bladder is full than when it is empty. He believes that in the beginning of the prolapse its increase can be avoided by advising the patients to empty their bladders only after defecation and to breathe through the open mouth during defecation. Good prophylactic measures are defecation while lying with the feet hanging and especially in Mummery's stooping position, while the bladder is kept filled at the same time. POLYA.

**Humphreys: The Blind External Anal Fistula.**  
*Internat. J. Surg.*, 1913, xxvi, 50.

By Surg., Gynec. & Obst.

The author states that the greater number of fistula cases seen by him have been operated from one to six times with resulting failure to cure and frequently with much damage to the sphincter muscles, and that such cases are much more difficult to operate successfully than those upon whom no surgery has been performed. He further claims that a failure to cure means either that the process is tuberculous or that the operator failed to find and lay open all the tract with the internal opening. He believes that a blind external fistula is frequently but a temporary condition, which a complete fistula may manifest, and in support of this belief he cites 14 abscess cases which he opened and injected with methylene blue and hydrogen peroxide. Two of these cases showed an internal opening. Of the remaining 12 cases, 3 healed and a cure resulted; 9 refused to heal and were injected once or twice weekly, all nine showing internal openings after one to six injections. In 2 of these the internal opening again closed and was again demonstrated after one and two weeks by injection of staining solution. Eight cases of blind external fistula were also cited; by injecting staining fluid once or twice a week all these revealed internal openings in from one to three weeks; in 2 of these cases systematic injections showed the internal opening closed after three weeks and open again after one and two weeks.

He thinks that the greater number of ischio-rectal abscesses originate in an infection through an abrasion or fissure in the anal canal, and that the internal opening is established by the breaking down of thrombosed lymphatics, which may occur even after the abscess has been incised or has broken externally.

He concludes that the larger number of so-called blind external fistulae are in reality complete fistulae with the internal openings not patent and conse-

quently not found at time of operation. Also that no operation should be begun on a complete fistula unless we are certain that the internal opening is patent at the time it is done; and it is his custom when an internal opening is demonstrated to pass a ligature through the entire tract, bring it out through the anus, tie it loosely, and leave it until ready to operate.

No operation should be attempted on a supposed blind external fistula until it has been under observation two to three weeks and injected twice a week with staining fluid. Most of these cases, when so managed, will reveal the true pathological internal opening — the key to the situation — and a cure may thus be effected in a larger percentage of these cases than if otherwise managed.

**Humphreys: Preserving the Sphincter in the Treatment of Fissure and Fistula in Ano.**  
*Am. J. Surg.*, 1913, xxvii, 41.

By Surg., Gynec. & Obst.

The author discusses the cause of fissure and thinks its usual location explained by the anatomy of the parts.

Casts of the anal canal are shown to demonstrate the existence of an anal pouch or cavity. He argues that the chief factor in the treatment of fissure is drainage. In support of this view he reports cases successfully treated by mechanical apparatus designed to drain the anal cavity without incision or diminution of pressure. He recommends incision for drainage in the posterior commissure regardless of the location of the fissure. The incision begins in the interval between the sphincters and extends backward 1 to 1½ inches, gradually lessening in depth.

Discussing fistulae, he states that incontinence often results from repeated operations where a single successful procedure might have produced no incontinence, and urges the importance of not beginning operation on fistulae until the internal opening has been demonstrated and so preserved until time of operation by passing a ligature through and tying. Excision with immediate suture is not recommended, because wounds usually become infected. Drainage is recommended if this method is employed.

Where the sphincter had to be cut in more than one place, or both sphincters cut, the author resorted to a method of slowly cutting through the muscles with a ligature by drawing it to and fro three times a week, thus making a new channel for the ligature each time, into which it is tied snugly, but not tight enough to produce necrosis. His object is to allow the first sphincter fibres cut through time to heal and become entrapped in the gradually advancing cicatrix before the more superficial fibres are separated. There was no noticeable impairment of function in a few cases treated by this method. In some difficult cases the silk ligature was threaded through the tract by washing it through with a weak solution of hydrogen peroxide injected from a small syringe.



The author also describes a new operation, "excision without cutting the sphincters," which he recommends in suitable cases where the internal opening is above the internal sphincter and where the ordinary incision or excision of the fistulous tract would result in incontinence. It is also recommended where only one sphincter would be cut if the sphincter were already weakened. Where the internal opening was very high it was first transferred to a lower level by the ligature method previously described before employing the operation of excision without cutting the sphincters.

**Operation.** A slightly curved incision  $2\frac{1}{2}$  to  $3\frac{1}{2}$  inches long is made parallel to the external sphincter fibres, with the external opening of the fistula about its centre. The incision is deepened and the fistulous tract dissected out on a probe which has been passed through it from within outward, i.e. with the point of the probe projecting through the external opening while the handle remains in the rectum. The dissection is carried down to the wall of the gut. The probe is then removed and the outer end of the fistulous tract is ligated and sterilized. A second incision is then made at the edge of the anus between the mucous membrane and the sphincter muscles, and the mucous membrane is further dissected up until the bottom of the first incision is reached, when the fistulous tract is drawn through into the new incision; the rectal mucosa is then still further dissected up, as in the Whitehead operation, till enough mucous membrane has been drawn down to admit of suturing it to the skin edge after amputation of a flap containing the internal fistulous opening and the fistulous tract. The outer incision is drained with rubber tissue but is not sutured. Wounds are dressed with iodoform gauze and a tube placed in the rectum; outer dressings are changed daily and drainage is removed after 24 to 48 hours. Bowels are confined 7 to 10 days. Results by this method perfect in three cases done.

#### LIVER, PANCREAS, AND SPLEEN

**Bogoras: Implantation of the Superior Mesenteric Vein Into the Inferior Vena Cava in Cirrhosis of the Liver** (Über die Einpflanzung der Vena mesenterica sup. in die Vena cava inf. bei Lebercirrhose). *Russk. Vrach.*, 1913, xii, 48.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author suggests an anastomosis between the superior mesenteric vein and the vena cava in cirrhosis of the liver to overcome the stasis of blood in the mesenteric and splenic systems and to lead a part of the blood of this system directly into the vena cava. The author made this attempt in a patient who suffered from cirrhosis of the liver for three years. A diminution in the size of the spleen and the non-accumulation of fluid in the abdominal cavity was noticed after the operation during a period of one month. Oliguria followed immediately after the operation but disappeared gradually.

JAFFE.

**Lecéne: A Large Solitary Adenoma of the Liver** (Un cas d'adenome solitaire volumineux du foie). *Rev. d. Gynéc. e. d. Chir. abdom.*, 1912, xix, 555.

By Journal de Chirurgie.

The case was that of a woman of twenty years who was admitted to the hospital with gastric symptoms (vomiting after meals, and in the morning, abundant epistaxis, epigastric pain, points of tenderness along the right costal margin). There was no jaundice, no alcoholic stools. There was marked emaciation. A well defined tumor mass was made out which was plainly in the liver. It was dull to percussion and yielding, the liver was enlarged in size. Hydatid cyst was suspected.

The author performed a median laparotomy. A grayish tumor was found protruding from the surface of the liver, and about the size of two fists. Aspiration yielded only blood. The point of puncture bled freely. A cuneiform piece of tissue was removed, which showed that the tumor was greenish color and solid. A fine catgut suture was used for hæmastasis of the wound. The rest of the liver appeared normal. The section of the specimen removed showed that the tumor was composed of hepatic cells arranged in irregular columns, and at certain points there was enormous intertrabecular capillary ectasia which gave an angiomatous appearance to the section. The hepatic cells of the tumor appeared quite normal; some of them were infiltrated with biliary pigment. There were nowhere any biliary channels. The tumor was a hepatic adenoma with certain points of angiomatous transformation.

Three months later, Lecéne had the opportunity of performing an autopsy on this woman, whose death had been due to murder. The liver weighed 2100 grams. It appeared normal except that at its center there was a large round elastic tumor which caused a bulging of the surface. It was situated about the union of the two lobes. This tumor was definitely encapsulated and could be enucleated. It was roughly lobulated and histologically was of the same character as the specimen removed during laparotomy.

Lecéne has found three other cases in the literature of solitary angioma of the liver, diagnosed during the patient's life, and successfully operated (Von Bergmann, Groube, Tuholske). They were benign tumors (the typical hepatomas of Sabourin) as opposed to the epitheliomas, atypical hepatomas or malignant adenoma of the Germans. The author believes that these solitary tumors, situated in an otherwise normal liver, are due to malformations dating back to the period of embryonic development of the hepatic glands. As long as they are encapsulated these adenomas are benign, though they may lead by their growth to hepatic insufficiency or may serve as the point of origin for a malignant neoplasm. Hence, when possible, they should be removed. The operation is facilitated by their encapsulation.

GEORGES LABEY.



**Gordinier and Sawyer: Primary Adenomata of the Liver Simulating Hanot's Hypertrophic Liver Cirrhosis.** *Am. J. M. Sc.*, 1913, cxlv, 258.  
By Surg., Gynec. & Obst.

Adenomata of the liver are rare, the authors being able to collect but 44 cases of this condition from the literature, 16 of which were solitary and 28 multiple. Of the latter 28 there were 21 associated with atrophic cirrhosis of Lannec and the remaining 7 had no mention of any cirrhosis whatever. These primary cases were accidental discoveries at autopsy, and no reference was made to any symptoms which they may have induced. In 25 of the 44 cases the tumors were composed of modified liver parenchyma, and in 19 the structure was that of agglomerations of large bile ducts. Of these 19, there were 4 multiple and 15 solitary tumors occurring in the liver.

A very common fate of adenomata of the liver is their malignant transformation into carcinomata with infiltration of the portal vessels, and metastases to various tissues.

Nearly all cases of multiple adenomata are associated with cirrhosis and thrombosis of the portal vein, and consequently a high percentage of these tumors are marked by vomiting of blood and by ascites.

The case reported by the authors was in a male, aged 31. His first symptoms were weakness, loss of appetite, pain, dragging in abdomen, and jaundice. The symptom-complex presented during the course of the disease was: (1) A long, continuous jaundice fluctuating in intensity; (2) a gradual but progressive liver enlargement until it became of enormous size, with special prominence of the left lobe; (3) definite though moderate enlargement of the spleen; (4) absence of acholic stools until within a few days of death; (5) absence of ascites, hæmorrhages from mucous surfaces, or enlargement of the abdominal or hæmorrhoidal veins; (6) presence of attacks of abdominal pain, with febrile reaction; (7) abundant bile-stained urine; (8) cholæmia and death.

Autopsy revealed a typical adenoma of liver, with no tendency to malignant transformation and no metastases. The multiple nodules of adenoma replaced the liver tissue to such an extent that only microscopically could any normal liver tissue be found.

The interest in this case centers around the facts:

1. That it presented the symptom-complex of Hanot's hypertrophic biliary cirrhosis.
2. That the study of the liver does not bear out the generally accepted view that multiple adenomata are always secondary to and in compensation for liver cirrhosis.
3. That it shows the importance of recognizing the fact that symptoms identical with those produced by either the atrophic or the hypertrophic form of cirrhosis may take their origin from multiple adenomata.

R. W. McNEALY.

**Courvoisier: Gall-stone Statistics from Basle** (Eine Basler Gallensteinstatistik). *Cor.-bl. f. schweiz. Ärzte*, 1913, xlviii, 161.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Of 16,205 bodies examined at post mortem, the author found gall-stones in 21.4 per cent of the cases. There were in 8,050 men 5.9 per cent and in 7,975 women 15.5 per cent. His figures also show that gall-stones were found to be very rare from 10 to 20 years of age. From then on there is a gradual rise in percentage of cases up to 70 years. After 70 years, cases become comparatively rare again. Courvoisier's statistics show that every 12th man and every 4th or 5th woman has gall-stones. Statistics given by other authors are compared to those of Courvoisier. He points out the site of gall-stones, fistulæ, carcinomas and perforations.

NORDMANN.

**Stetten: Angulation of the Junction of the Hepatic and Common Ducts after Cholecystostomy, Simulating Common Duct Obstruction.** *Ann. Surg.*, Phila., 1913, lvii, 182.

By Surg., Gynec. & Obst.

The author has noticed on several occasions that, after a comparatively simple cholecystostomy for gall-stones, when it was obvious that the bile passages were completely cleared of calculi at the operation, either the biliary fistula persisted or, if it closed, symptoms of biliary obstruction (jaundice and colic) developed. A second operation would show that the choledochus was entirely free of stones, that a sound could be passed into the duodenum after choledochotomy, and that after cholecystectomy, or even freeing the gall-bladder from the abdominal wall, closing it and dropping it back into the abdomen, the patient would make an uneventful recovery. The author recently had a case in which accurate observations were made and the cause determined.

His case was a female, aged 19. *Diagnosis:* Subsiding cholecystitis, calculi in gall-bladder. *Operation:* Longitudinal incision in right rectus muscle. Gall-bladder large and slightly congested, but walls not thickened. Slightly viscid bile aspirated, and bladder opened, five medium size stones being removed. Ducts carefully palpated and found empty. A cholecystostomy was performed by inverting the opened fundus of the gall-bladder over a drainage tube by means of a Lembert purse-string suture. The bladder was then fixed to the parietal peritoneum. The bladder was neither shrunken nor retracted, and the fixation to the abdominal wall was accomplished without the slightest tension. A gauze drain was placed below the bladder and the wound closed. The patient reacted well, and there was free drainage from the tube. One week later the tube and drain were removed and tampon inserted. The biliary discharge promptly stopped. There was a mucopurulent discharge from the abdominal wound. One week later patient had frequent attacks of severe colicky pains, evident icterus and acholic stools.



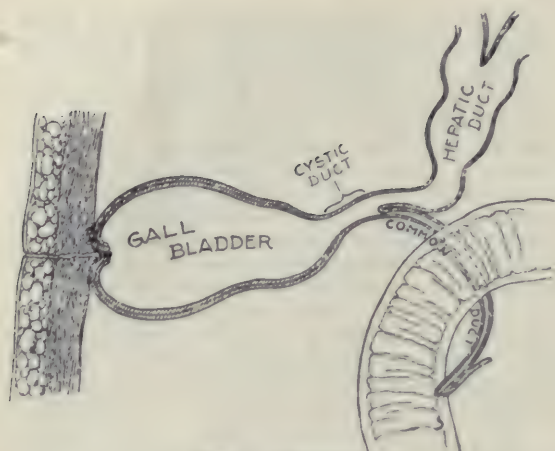


Fig. 1. (Stetten.)

One month later a second operation was performed through the old scar. No stones felt in the gall-bladder or ducts. A kinking of the junction of the hepatic and choledochus was found. The angle formed was less than 45 degrees. The gall-bladder was removed. The stump of the cystic duct was split upward into the hepatic and down into the common duct. Though there was a valve-like formation at the junction of the two ducts, a large probe was easily inserted into the duodenum and also up into the hepatic duct, which was dilated. No sign of calculus. A tube was inserted into the hepatic duct for drainage and sutured into place. One gauze wick was led to the opening in the ducts and another to the bed of gall-bladder. Wound closed except for drainage. The patient made a prompt and uneventful recovery, and was discharged cured one month later.

At the angulation, a valve was formed so that the flow of bile into the intestine was almost impossible. This accounts for the pain and jaundice when the biliary fistula was closed and the tendency toward persistence of the fistula after it was reopened. There must have been decided contraction of the gall-bladder after the first operation, and this, aided by the respiratory movements, resulted in the angulation. The condition was promptly cured by cholecystectomy, which permitted the angle at the junction of the ducts to straighten out.

The author reviews some of the literature bearing on this point, and says that this is a good argument against the employment of cholecystostomy and for the use of cholecystectomy.

EDWARD L. CORNELL.

**Lameris: Hepato-Cholangio-Enterostomy.** *Zentralbl. f. Chir.*, 1912, xxxix, 1665.

By Surg., Gynec. & Obst.

Lameris reports the following case: A man 44 years of age had marked jaundice for four months. He was operated on under the diagnosis of obstruction of the common duct by tumor or stone. The

liver was found to be enlarged and firmer than normal. The gall-bladder was enlarged and thin-walled. Adhesions did not exist. The hepatic duct was markedly dilated up to its junction with the cystic duct. At this point a tumor was found originating from the cystic duct and encroaching upon the hepatic and common duct. The gall-bladder contained clear mucus. The cystic duct was occluded. Tumor and gall-bladder were extirpated leading to a defect in the hepatic duct of 6 x 4 mm. The hepatic duct was drained. Microscopically the tumor proved to be adenocarcinoma. The patient was dismissed with a fistula and in good general condition. Seven months later he was again operated on for closure of the fistula. The liver surface was normal, the capsule somewhat thickened. At the transverse fissure a tumor of hen-egg size was found. It was located partly within the liver and partly within the contracted hepatico-duodenal ligament. Its removal left a short stump of the hepatic and common ducts, not permitting reunion or anastomosis with the gut. A piece measuring  $2\frac{1}{2} \times 6$  cm. was removed from the margin of the right hepatic lobe. Hemostasis was effected by cautery. An opening was made in a loop of jejunum about 40 cm. below the duodeno-jejunal junction and this united with the liver wound by two rows of sutures. The hepatic duct-stump was drained. During the next few days there was discharge of bile along the drainage tube. Three weeks later the drain was removed. After six weeks the wound had closed, the jaundice disappeared and stools were of normal color. During the following three months the patient was able to attend to his work. At the end of that time he returned, complaining of loss of weight. The liver was enlarged and palpable. He died two months later of right-sided pleuro-pneumonia. Autopsy showed several abscesses in both lobes of the liver. Upon opening the anastomosed portion of the jejunum, about ten openings were found from which bile issued on pressure. Microscopical examination showed that these openings corresponded with ducts lined with cylindrical epithelium and penetrating into the liver substance. This shows that with a total defect of the main bile ducts, new bile ducts were formed after uniting liver and gut, that these ducts functionated eight months after operation and that hepato-enterostomy may be successful in rare cases.

E. C. RIEBEL.

**Ewald: A Case of Tumor of the Spleen with Fatal Hæmorrhage** (Ein Fall von Milztumor mit tödlicher Blutung). *Allg. med. Zentral-zeit.*, 1913, lxxxii, 48.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Ewald observed a large splenic tumor in a man 48 years old. The patient was never sick and had had dyspepsia for only four months. The blood picture was normal. There was no ascites, no icterus, no blood in the stomach or intestines. Wassermann negative; Hgl. 110; urine, indican, +; otherwise without findings. The patient suddenly vomited blood (1240 cc.). Following this the tumor



of the spleen was much smaller. The patient died in collapse. The autopsy showed, aside from a large spleen (30×7×6), a partial thrombosis of the splenic branch of the portal vein near the hilus of the spleen. This thrombus is canalized. There were other thrombi on the walls of the branches of the portal artery. Macroscopically and microscopically the stomach and intestinal mucosa is entirely intact, as well as the pulp of the spleen. The cause of the thrombosis and the hæmorrhage from the stomach remains unexplained, since lues cannot be considered. The hæmorrhage from the stomach might be considered in the group of the so-called parenchymatous hæmorrhages of the stomach.

COHN.

**Utrobini: Banti's Disease Cured by Splenectomy**  
(Ein Fall von Heilung des Morbus Banti nach Splenectomie). *Russki. Vrach.*, 1913, xii, 92.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports the case of a patient who has had Banti's disease for three years. A splenectomy was performed in the second stage of the disease. After removal of the spleen the percentage of hæmoglobin rose from 63 per cent to 76 per cent. The number of red cells rose up to 5,750,000. Instead of a leucopenia there developed a leucocytosis of 11,592 which later dropped to 8,437. The liver became smaller. The bile pigments left the urine. The patient did not feel so tired as heretofore and gained twenty-five pounds in weight. JAFFE.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, ETC.

**Bier: Observations on Bone Regeneration.** *Arch. f. klin. Chir.*, 1912, c, 90. By Surg., Gynec. & Obst.

In 1897 Bier removed the entire diaphysis of the humerus, together with the periosteum, for a sarcoma. The defect was replaced by a portion of the tibia, including both periosteum and marrow. In 1912 the condition of the arm was as follows: The upper arm showed shortening of 1½ cm. The function was normal. The contour of the bone was irregular and a knuckle could be felt at the lower end. The scar and outline of the tibia were normal and its anterior edge was sharp. The X-ray picture of the right humerus showed that the new bone was 2 to 3 mm. smaller than the left. A central medullary cavity was plainly visible. The connecting line of the transplant with the remnants of old bone was plainly visible at either end. The surface of the new bone was irregular but had the general form of a normal humerus. The X-ray of the tibia was normal seen from in front. From the side there was seen to be a slight diminution in size.

This case shows that the transplant even without the assistance of the periosteum of the old bone has formed a complete long bone with a central marrow cavity. In the last 5 years Bier has transplanted large pieces of the tibia in 16 cases. If a large piece were removed aseptically, even with the attached periosteum, and the cavity was allowed to fill with blood over which the skin was sutured tightly, a complete regeneration of the tibia with its normal contour regularly occurred. But if the wound was tamponed or blood escaped through the skin suture or the skin was pressed tightly into the cavity by a compressing bandage, regeneration never took place in its entirety. In 11 of the 16 cases there was complete regeneration of the bone. The blood seemed to act as a scaffolding for the bone to grow into. The cutaneous scar did not grow together with the scar in any of the cases. The regeneration took place surprisingly fast, in one case being com-

plete within a month. In contradistinction to this, Bier found that bone cavities left after scraping out a central sarcoma or tuberculous bone regenerated much more slowly and the new bone never assumed the original form of the old bone. Usually there was massive periosteal new bone formation. These observations show that the medulla is of great importance in the regeneration as the small narrow spaces are usually destroyed by scraping out the bone and because regeneration *in toto* of the cavity left by the transplant occurs even when the periosteum also is transplanted.

The transplantation of a piece of the tibia should include periosteum and medulla. A straight or curved incision is made over the anterior border of the tibia, the fascia is split and the muscles held apart. The bone is chiseled or sawn above and below to the medulla and split off with the chisel. Bier uses an electric saw. The cavity is allowed to fill with blood and the skin is sutured tightly over the defect so as to prevent the escape of blood. An aseptic bandage is applied which is left undisturbed for 2 or 3 weeks in order to prevent secondary infection. Bier corroborates Lexer's observation that transplantation of the marrow leads to inflammatory phenomena and fever oftentimes. Bier believes that this aseptic inflammation protects against bacterial invasion.

ERWIN P. ZEISLER.

**Allen: Acute Osteomyelitis and Its Complications.** *Am. J. Surg.*, 1913, xxvii, 50.

By Surg., Gynec. & Obst.

As preliminary to a consideration of his subject, the author calls attention to certain factors in the embryology and histology of bones that influence the pathology and course of osteomyelitic infections. Surgically we are vitally interested in the epiphyseal, or growth line, in long bones. It is well understood that any interference with the epiphyseal cartilage in the young before the bone has attained its full length will interfere with the proper growth of that bone. It is an interesting fact also that this



cartilage serves as a barrier to osteomyelitic infection which always starts in the shaft of the bone, as well as a protection to the shaft from infections, such as tuberculosis, which may originate in the epiphysis.

He emphasizes the point that although the macroscopical conception of a long bone is one of hardness and immutability with little power of intercommunication between one portion and another, in reality it has a complete system of intercommunicating canals, and has great power of changing both its size and shape; it can hypertrophy or atrophy under systematic influences as do other tissues of the body. As a vast majority of infections are in the long bones, perhaps because they bear the greatest strain and are more subject to trauma, we are chiefly concerned with the structure of these. A histological description of bone tissue is then given.

The author classifies acute infections of bones: histologically, as periostitis, osteitis and osteomyelitis; bacteriologically, as staphylococci, streptococci, pneumococci, typhoidal and syphilitic; and clinically, as acute and chronic.

He states that the direct cause of an acute infectious osteomyelitis is always by an infection by pyogenic bacteria. The bone may be infected in two ways, ectogenous from trauma and endogenous or hematogenic. He states that in some cases the osteomyelitic focus seems to be the primary focus of the disease.

Allen cites that the symptoms differ with the virulence of the infecting organism, the place of its lodgment and the resistance of the individual. The primary focus of hematogenous infection is always in the bone marrow in the diaphysis of the long bone, and usually in that spongy portion lying next to the epiphysis which Kocher has termed the metaphysis. Clinically this is an important point, as tubercular infections always begin in the epiphysis. The kinds of bone infections are similar to those of other connective tissue inflammations in that we have phlegmons and localized abscesses, only differing in their course because of the specialized structure of bone. The walling off is slower as bone is less vascular and the necrosis is more extensive as the bone is less rigid and the circulation through it is slow. When the process is arrested we have the same picture here as in the soft tissues: extension in the marrow is checked by granulation; in the cortex by a thickening and hardening. The infecting bacteria once lodged in the marrow may produce a necrosis extending over a very considerable area of a long bone before marked infiltration with leucocytes can occur.

The author's opening remarks on treatment are short, concise, and to the point, as is his opening statement as follows: "Once the diagnosis is made, the only treatment is surgical. In some of the mildest infections without the usual intense constitutional reaction, putting the part at rest with the proper application of the Bier bandage may cause the whole affair to subside." He also discusses several cases to prove his points.

In the severe infections the systematic invasion presents a picture of chill, high temperature, rapid pulse, intense leucocytosis, severe pain and marked swelling. Here action, and that as soon as possible, is imperative. If seen early, incision of the periosteum and opening the bone for drainage of the marrow may save the bone from extensive destruction and check the constitutional invasion. If seen later, after the pus has formed underneath the periosteum, lifting it away from the bone to a greater or less extent and possibly having passed into the surrounding soft tissues, accompanied by a general and profound septicæmia, the operation must be performed as a life-saving procedure, with ample drainage beneath the periosteum and exits at the lowest and best angle. We must always open the bone into the marrow as quickly as possible; drain superficial phlegmons and abscesses thoroughly and give the patient vigorous supportive treatment.

ARTHUR B. EUSTACE.

**Groves: Multiple Myelomata, with Numerous Spontaneous Fractures and Albumosuria.**  
*Ann. Surg., Phila., 1913, lvii, 163.*

By Surg., Gynec. & Obst.

The author reports a very interesting case in which the Bence-Jones body was found and considered the causal factor. Some very good X-ray photographs accompany the article. A short review is given of cases in which fracture of the bones played an important part, and the point is noted that while the disease is more frequent in men, women present the majority of fractures. The case the author reports is unique in many respects. The length of history is 12 years; at present the patient is in good health, the disease being quite stationary. The number of fractures and the development of large, conspicuous bony tumors is in marked contrast to the history of other cases reported.

In brief, the case reported is as follows: Male, 39 years of age, clerk, complains of multiple spontaneous fractures and swellings of the bones. Twenty years ago was a "perfect Sandow." In 1900 he had an attack of gastritis, with vomiting of food (but not blood) and severe pain. There was much loss of weight. However, he completely recovered in health and strength. In May, 1901, he suffered from rheumatic pains, and finally fell, breaking the left tibia. It took nine months to consolidate, no other pathology presenting to indicate the fracture was of an exceptional nature. In January, 1902, he hit the left lower jaw on window while opening it; numbness followed but not much pain. Later a fleshy growth appeared and the jaw became thickened, with cherry-like outgrowths which were absorbed or burst, discharging thick, dark blood and stringy mucus. The tumor increased in size till 1909, but since then it has decidedly diminished and the fleshy covering had entirely disappeared. In 1904 he suffered from severe "muscular rheumatism," and large bruises came out



on the thigh without any apparent cause. He became less sure on his feet. February, 1904, following months of severe pain in left thigh, the left femur broke under muscular exertion; it healed in nine weeks. In April, 1904, while convalescing and moving to an armchair, the right femur broke. It was kept in splints ten weeks and was well by the end of the year. February, 1905, while walking with crutches, the left femur broke again in the old place, healing taking place in three weeks without setting. Three days later, the right forearm was fractured in a similar manner. February 25, while reading a book in bed, the left elbow broke, causing great pain, and a tumor developed to the present size in about a week. February, 1905, while lying in bed and drawing his leg under him, the left femur was fractured. In 1908 the base of the second right metacarpal became swollen.

At present the patient is a very nervous man with an unhealthy, sallow complexion. He is unable to walk because of the deformities in his arms and legs, and further, he is naturally very anxious lest he should make a misstep and have a fresh fracture. The left jaw is thickened, forming a smooth tumor, and viewed from the inside it is deeply excavated, the surface of the cavity being covered by scar tissue. All the teeth on that side have been lost. The right forearm is the seat of a well-defined tumor, 8 x 4 cm., rather above the middle of the shaft, extending as far as the head of the radius. Little rotation is left. The elbow of the left forearm is the seat of a large, globular tumor 10 cm. in diameter occupying the upper end of the ulna. The radius is completely dislocated from the humerus. The joint is freely movable, but its range is only 90°. Supination is impossible. The hands show the swelling mentioned before. The head of the right femur as well as the neck is occupied by a large vacuolated tumor. Other deformities are also present. The same condition is present in the left femur, and in addition the whole of the shaft is occupied with large vacuoles. The left lower leg is much deformed, being bent backwards at a right angle, with a large globular tumor at this angle. There is a tumor of the left calcaneum, 12 x 7 cm., which is vacuolated. The right tibia is not deformed, but the whole bone is thickened. The sixth and eighth ribs show well-defined tumors on X-ray.

Urine analysis showed an average excretion of 1200 to 1500 cc. daily with 5.2 per cent precipitable protein (63 gm. per 24 hours). The purified protein is not soluble in distilled water but is readily so in presence of a trace of sodium carbonate. With a trace of acid it appears at a low temperature and disappears on boiling. There were some casts and pus cells also. He is in better health now, the blood is normal, but albumosuria still continues.

Groves says the case seems to prove certain points conclusively. The course is indicative of an infective disease of a chronic character which has worn itself out. While the tumors resemble sarcoma, clinically they are not. EDWARD L. CORNELL.

**Mauclaire and Dubois: Sporotrichosis of the Humerus and Tibia** (Sporotrichose de l'humerus et du tibia). *Bull. et. mem. Soc. de chir. de Par.*, 1913, xxxix, 275. By Journal de Chirurgie.

The patient was a woman of 55 years; she had been treated for 4 years for an ulceration of the left cheek. This had been diagnosed epithelioma. Cauterization had reduced the ulceration to the size of a dime. For 6 months she had felt general pains in all her bones which later localized into the humerus and internal malleolus. Finally she noticed a tumor mass at the lower and external part of the arm. The patient entered the hospital. There was evidence of fluctuation at the site of the tumor mass. There was no enlargement of the axillary glands. There was a redness at the internal malleolus which gave no fluctuation. Mauclaire had an X-ray taken of the humerus. An abscess was shown about the shaft of the humerus. The rest of the bones of the upper extremity were normal. The ankle was not radiographed.

The patient showed no signs of tuberculosis, of syphilis or chronic osteomyelitis. A diagnosis of a sporothrix infection of the bone was made. Upon incising the brachial abscess thick pus was found underneath the triceps muscle. The finger was put directly into the center of the abscess. An abscess cavity the size of a small nut with few small sequestra were present. There were no rice bodies and there was no presence of caseation. The muscle was infiltrated. An incision was made over the reddened area near the internal malleolus. A greyish white tissue was met. The bone was barely touched. No sequestra were found.

In spite of the incisions, the suppuration continued. The examination of the pus (made by Dubois) at the end of 15 days, showed sporothrix Beurmanni.

J. DUMONT.

**Daniel: Septic Infection Versus Chronic Intestinal Stasis; the Legality of Ileo-Colostomy for Arthritis.** *Clinical J.*, 1913, xli, 305.

By Surg., Gynec. & Obst.

Daniel takes issue with Lane regarding treatment of arthritis by ileo-colostomy. He calls attention to the close casual connection of oral sepsis with the gastro-intestinal lesion and attributes what Lane calls autointoxication to gastro-intestinal sepsis which arises from infection without the existence of stasis. The cæcum is the earliest and most severely affected part of the intestine, since in the cæcum food is meant to be delayed, thoroughly churned up and mixed with digestive juices. Owing to this delay (not stagnation), the mucosa of the cæcum is subjected to continuous and prolonged insult from bacteria present in the food. If the bacteria are numerous and if reinforced by virulent germs from suppurative processes in the upper digestive tract and nasopharynx, then the cæcal mucosa is damaged, lymphangitis results, the glands in the ileo-cæcal angle are infected, peritonitis occurs over the cæcum, appendix and lymph-glands and



adhesions form (Lane's bands) which contract, and stasis may or may not be a sequence. Correct treatment of these cases: cleansing the mouth, naso-pharynx, antra, etc., so removing infection; give them oils, suitable laxatives and diet and the number of cases requiring colectomy will be reduced to those in whom the damage done to the mucosa has progressed to ulceration. He believes that Lane's short-circuiting operation drains a septic tract and permits of a quicker exit of bacteria, thus shortening the period in which they may produce end-toxins; but instead of cutting off the source of supply and rationally treating the stasi, Lane deprives the patient of a portion of bowel having an important physiological function.

All that Lane claims for mechanical stasis is much more rationally explained by the theory of intestinal sepsis.

L. G. DWAN.

**Packard: The Mechanical Treatment of Hip Disease.** *Am. J. Orth. Surg.*, 1913, x, 329.

By Surg., Gynec. & Obst.

The relative value of fixation, traction, and weight-bearing are discussed with reference to the different stages of the disease.

The indications for treatment are to diminish the activity of the process and to prevent deformity. It is evident that the primary focus of the disease is very frequently found in the acetabulum. Such cases require different treatment from those beginning in the head of the femur; and also many cases, if recognized and treated early, may recover with functional use of the joint.

The plan of treatment adopted is as follows: In the early stages of the disease traction is applied, with the patient recumbent for a sufficient length of time to relieve sensitiveness and deformity. A long traction brace is now applied with thoracic band, adjusted in such a way as to make about 20 degrees abduction. This brace is used for about two or three years, or as long as there seems a possibility of getting motion—even longer in many cases of bilateral disease, where even slight motion is so important. At this stage, if rigidity persists and a tendency to adduction and flexion is present, then a plaster of Paris spica is used of sufficient length to prevent deformity and allow weight-bearing, hoping to get ankylosis in a good position. If at the end of about two years everything is favorable for motion, a convalescent splint that allows motion and prevents weight-bearing is used.

**Waelder: Tear of Ligamentum Patellæ Proprium and Its Diagnosis** (Zur Kenntnis der zerreissung des Ligamentum patellæ proprium). *Med. Cor.-Bl. d. württemb. ärztl. Landesver.*, 1913, lxxxiii, 60.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The injury occurred in a man forty years old who fell on his knee while his leg was sharply flexed. The pavement on which he fell was of coarse crushed stone. The diagnosis was made by the fact that the patient could not extend his leg, by the hæmatoma, and by the fact that the patella was higher

than normal. An operation was performed on the following day and the ligamentum patellæ proprium was found to be torn near the patella, the capsule of the joint was torn and the ligamentum laterale was torn from its insertions on the tibia. The hæmatoma was cleaned out and the capsular tissue and the other tissue that was macerated and poorly supplied with blood was removed. The ligamentum laterale was sutured to the condyle of the tibia. The capsule of the joint and the ligamentum patellæ were sutured with catgut. The line of suture was strengthened by suturing over it a flap transplanted from the fascia lata. Plaster of Paris dressing was put on; healing and good function resulted.

EHRlich.

**Jaffe: Treating Leg Ulcers with Dry Air** (Die Behandlung der Ulcus cruris mit getrockneter Luft). *Ztschr. f. ärztl. Fortbild.*, 1913, x, 73.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Fifteen grave cases of traumatic and varicose leg ulcer were treated with dry air. This was generated with the Siccor apparatus. The air was of room temperature. Of the fifteen, two ulcers were healed completely while the rest showed improvement. In all, the subjective symptoms were decidedly reduced.

COLLEY.

## FRACTURES AND DISLOCATIONS

**Keppler: Hæmorrhage in Displaced Fractures** (Die blutige Stellung schlecht Stehender Frakturen). *Deutsche Ztschr. f. Chir.*, 1913, cxxi, 137.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In his operative technique for fractures of the long bones, the author overcomes the great harm done by the use of sutures placed deep in the tissues or by temporary bony union by placing the fractured ends in place so that the irregular ends of the fragments are interlocked more perfectly. The most favorable time for replacing the fractured ends by this method is the beginning of the second week after the fracture. A constrictor is put on to prevent bleeding and it is done under general anæsthesia. Complicated injuries and macerations of the soft tissues do not permit of the use of this method. A splint dressing is put on. After three or four weeks the part is treated with hot air; and passive motion is instituted. The author treated 29 cases of fracture of the forearm and 11 of the humerus by this method with good results. It failed in a case of a supracondylar fracture of the femur and humerus, and it does not insure safety enough in case of intracapsular fractures. This method is only practicable when the nonsurgical method does not promise good functional result.

BERGEMANN.

**Mondor: Plantar Ecchymosis in Fracture of the Os Calcis** (L'ecchymose plantaires dans les fractures du calcaneum). *La Presse Méd.*, 1912, xx, 1082.

By Journal de Chirurgie.

The classical ecchymosis in fracture of the os calcis is of the bimalleolar type. The plantar



ecchymosis has been recently described by Westphal. Mondor has observed a number of cases and the following are the characteristics described by him:

In three out of four cases the findings were constant. In one case he saw the ecchymosis 2 hours after the accident. In two others he saw the cases 24 hours after the accident.

The ecchymosis was found in the plantar arch in each case. There was no discoloration on the dorsum of the foot in any of the cases.

The extent was variable. In two cases the ecchymosis extended in all directions with poorly defined outline. In two other cases the ecchymosis was more sharply defined and the size of a 5-franc piece.

In each case there co-existed a dorsal ecchymosis underneath the malleoli. The lateral margins of the foot were never ecchymosed.

In one case, there was an ecchymosis of 2 cm. in length on the plantar surface of the four outer toes. Thiery holds this sign as pathognomonic of fracture of the metatarsal bones.

The plantar ecchymosis, in 2 cases, was so distinct that we could diagnose a fracture of the os calcis by this one sign. The other signs would make one think rather of a sprain of the tibio-tarsal or astragalo-calcaneus ligaments.

After studying the above cases Mondor arrived at the following conclusions:

1. Ecchymosis in fracture of the os calcis is not always beneath the malleoli and retarded in appearance. It may appear at once and be found on the plantar surface.

2. Ecchymosis on the plantar surface of the digits, said to be pathognomonic for fracture of the metatarsals, may exist in fracture of the os calcis.

J. DUMONT.

**Thomas: The Reduction of Old Unreduced Dislocations of the Shoulders.** *Ann. Surg.*, Phila., 1913, lvii, 217. By Surg., Gynec. & Obst.

The best treatment for old unreduced dislocations of the shoulder is still undecided, but there is a general tendency toward earlier operative interference. Nearly all dislocations become practically irreducible after three months, and they may become very difficult of reduction after as many weeks. The increasing tendency toward operative reduction is due in part to the betterment of operative technique in general and in part to the great difficulty met with in attempting to reduce many cases. The average functional result is better, however, after non-operative than after operative reduction. One is apt to underestimate the difficulties which are encountered in these cases, since the displacement is not great, only the rounded head of the humerus being anterior to the glenoid margin (in the subcoracoid variety). The particular obstacle to reduction has never been successfully demonstrated. Kocher, after studying dislocations on the cadaver, came to the conclusion that the

capsular tear, produced by the escaping head, closed about the neck and after cicatrization occurred prevented reduction. He noted, however, in a post-mortem dissection, that he "found no capsule tear anywhere," but "a closed fibrous tissue covering passed over the head everywhere." Kocher produced dislocations on the cadaver, after making a longitudinal slit in the lowest part of the capsule, by abducting the arm and pressing the head downward. The author finds by cadaver dissection that a dislocation does not occur through such a slit but that the abducting force produces a capsular tear at an angle to the opening. Such an incision probably has little effect on the size and location of the transverse tear, which usually occurs at the humeral or glenoid attachment. Such a laceration could hardly become constricted about the neck of the humerus in a recent dislocation. It will be seen in a recent dislocation that neither the anterior nor the posterior portions of the capsule can prevent reduction, even after cicatrization. The undamaged portions of the capsule at the upper and lower limits of the tear are drawn inward and forward by the head, and the direction of the fibers is changed from an almost vertical to a transverse one, being rolled somewhat into a cord. It is probable that these parts of the capsule form the chief resistance to reduction after cicatrization and that they must always be torn, to a greater or lesser degree, before reduction of an old fracture can be accomplished. The safest and best method of reduction is by traction on the humerus at a right angle with the trunk, with direct pressure on the head, toward the socket. The danger of injury to the axillary vessels and nerves has undoubtedly been exaggerated. The circumflex nerve and the posterior circumflex vessels are the only important ones lying in direct contact with the capsule. No damage was done to the vessels or nerves in any of the six cases reduced by this method. The thick subscapularis muscle lies between the vessels and the humeral head. The objection to the Kocher method of reduction is that force sufficient for reduction cannot always be made without fracturing the humerus. In the abduction method this is not the case; in fact, one case which was complicated by a fracture of the lower third of the humerus was reduced after eight weeks' duration.

Following is the method of reduction: under ether anaesthesia, the patient is placed on blankets on the floor. The Allis apparatus is applied, by which traction is made only on the humerus. The operator sits on the floor with one stockinged foot against the axillary border of the scapula, the other against the upper border. Traction is made at a right angle to the trunk. An assistant kneels alongside the patient and pushes the head toward the socket, when traction has moved the head downward far enough. Traction may be made by another assistant by means of a folded sheet passing under the head of the humerus. When the head seems to have passed outward far enough, the first assistant pulls the



elbow toward the body. The effect of fractures occurring about the head has not been fully studied. The commonest fracture is the one of the greater tuberosity. Many of these can only be reduced by operation.

In some cases, fragments of the head obstruct or fill the glenoid cavity. Six dislocations were successfully treated by the method here described. One of the successful cases was of eight months' standing.

JAMES F. CHURCHILL.

### SURGERY OF THE BONES, JOINTS, ETC.

**Walker: Operative Treatment of Fractures.**  
*N. Y. St. J. M.*, 1913, xiii, 64.

By Surg., Gynec. & Obst.

The author contrasts the immediate and the remote results of the treatment of fractures by the open and closed methods.

In following up 100 cases of fracture of the femur at Bellevue Hospital, it was found that although the majority of patients were able to return to work, the largest number continued to suffer some disability. Most of these cases were first treated by Buck's extension and then by application of a cast. Better results have since been obtained by the open treatment, and failures with this method are not due to wrong conception of the broad principle underlying it, but to errors of technique.

The author cites a number of fractures which in his opinion always indicate the open method of treatment. A series of good cuts illustrating fractures before and after operative treatment are introduced, together with case reports.

He concludes that fractures should be considered as wounds whose cut surfaces should be brought together and held by some mechanical means. The operative treatment is indicated in all displacements where the deformity cannot otherwise be corrected, in involvement of joints with loose or unmanageable fragments and in cases of vicious union with malposition which interfere with function.

F. G. DYAS.

**Pellissier: Treatment of Oblique Fractures of the Leg with the Lambret Apparatus** (*Dutraitement des fractures obliques de jambe par l'appareil de Lambret*). *Thèse d. doct.*, Lille, 1912, Nov.

By *Journal de Chirurgie*.

In July, 1910, A. Broca presented to the Surgical Society at Paris an apparatus designed by Lambret (Lille) for the reduction, coaptation and maintenance of oblique fractures of the leg. This apparatus, based upon the methods of Steinmann, consists essentially in the following: Two steel wires pierce the ends of the fractured bones. These wires are held apart by an apparatus and gradually drawn by traction with a cogwheel arrangement and two twisting handles.

The results obtained with the primitive apparatus of Lambret were unsatisfactory in so far as it did not correct the angular or lateral displacement. Quénu

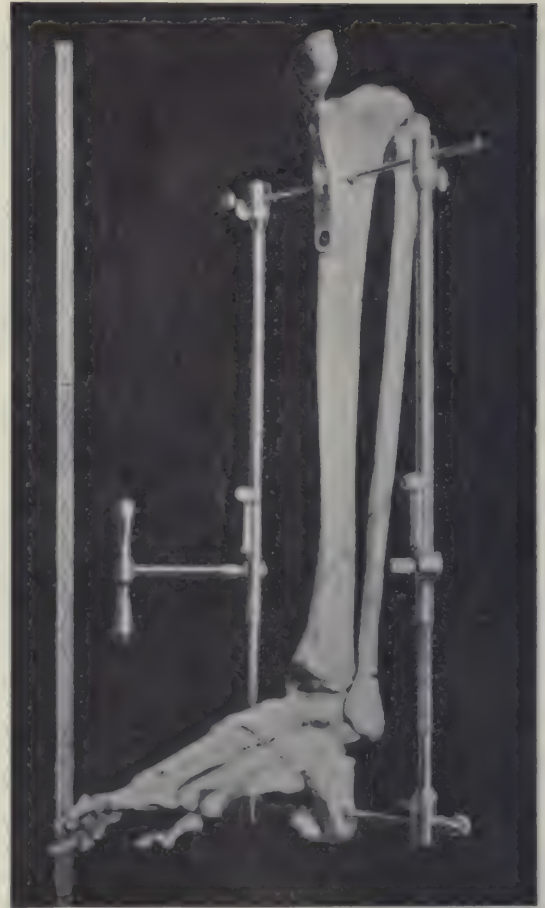


Fig. 1. (Pellissier.)

and Mathieu, in April, 1911, also showed a modification of the Lambret instrument to the Surgical Society. Since then Lambret has modified his instrument so that he can correct the lateral deformity. The fragments are placed in a horizontal groove in which lies the wire. By means of a screw, the wires can be fixed to the fragments in the desired position.

Pellissier describes the three instruments constructed by Collin, and that of Kirschner which had been out some time before that of Lambret, but not known in France in 1910. He gave his technique based upon 11 of his own cases; 9 were of fractures of the lower third of the leg; 2 were fractures of the malleoli; all were oblique. Of these 11 cases, 6 were cured without any shortening, one with  $\frac{1}{2}$  cm. shortening and 4 were still under treatment.

In order to study the process of repair of the bones with the wire suturing, Pellissier made a series of experiments upon dogs and rabbits and examined the tissues histologically at different intervals.

The following are his conclusions: (A) Clinical.



The application of wires as with the Lambret apparatus requires a local anesthesia only. The wires being placed away from the seat of fracture render less dangerous the risk of infection, especially in comminuted fractures with injury to soft parts and in the presence of hæmatomas. The advantages of the instrument lie in the ease of its application, the good position in which it holds the fragments, the perfect extension, the total correction of lateral displacements, the freedom left to the fractured limb, and its articulation, which can be easily examined, massaged and mobilized.

The apparatus can be used in all cases of oblique fractures of the leg, with much displacement, hard to reduce, or where the fragments injure the skin; in fractures above the malleoli; in complicated fractures hard to reduce; fractures in old people and in those to whom a general anæsthetic cannot be given; in irreducible luxation of the foot (Quénu); in all cases where the ordinary methods are inefficient.

(B) Conclusions drawn from experimental research: The passing of the wire causes no necrosis in the soft tissues or bone. The traction on the wire causes a slight atrophy of the osseous tissue next to the wire. The drill carries a few fine fragments of bone into the medullary cavity, but these are very well borne and serve to stimulate callus formation. At the end of 10 days there is practically no opening left, so that the possibility of infection is greatly diminished. E. JEANBRAU.

**Nespor: Refractures of the Patella** (Beitrag zur Kasuistik der Refrakturen der Patella). *Wien. med. Wchnschr.*, 1913, lxxiii, 451.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Nespor reports three cases of refracturing of the patella which occurred in consequence of insignificant trauma such as extension of the leg and gliding. In one case the fragments were united by two strong silk sutures and a flap of the tendon of the quadriceps muscle turned downward and inserted into the periosteum of the lower fragment. In the two other cases Nespor used Spechtenhauser silk wire, No. 5 and No. 9. In all three cases complete recovery with good function resulted. CREITE.

**Bradford: Fixation in the Treatment of Hip Disease.** *Am. J. Orth. Surg.*, 1913, x, 354.  
By Surg., Gynec. & Obst.

In previously published articles the author has demonstrated the advantages to be derived from the systematic use of traction in the treatment of hip disease, particularly in the prevention of deformity, and especially the deformity of shortening from subluxation, widening of the acetabulum, and absorption of the head. The author claims that the best clinical test of the efficacy of treatment is the extent to which, in the terminal result, the top of the trochanter has been drawn above the Nelaton's line. In the present article a demonstration is presented of the value of a traction splint as a means of fixation.

By observation upon patients and demonstrations upon models it is shown that, owing to the mobility of the spine and the compressibility of the abdomen, thorax, and covered pelvis, it is impossible to fix absolutely the hip joints by any appliances extending upward in the attempt to hold the thorax and downward along the thigh and leg. The long spica is imperfect in furnishing hip fixation, and this is also true of the Thomas hip splint.

As a taut pull on the head and tail of a wriggling snake will check its movement better than tying it to a stick, so adequate traction with pelvic points of counter-traction can be made to fix the hip joint without circular bands around the thorax or pelvis.

The commonly used traction splints are of value, but often are unsatisfactory in the amount of pull furnished, the inadequate points of counter-pull, and in the complicated nature of the appliance. An abduction traction appliance used for several years at the Boston Children's Hospital has been demonstrated to furnish, in addition to traction, more fixation than is given by a long plaster spica. The appliance is similar to the well-known Thomas knee splint, with an addition which furnishes perineal resistance on both sides of the perineum and a traction attachment at the bottom.

**Morton: The Results of Excision of the Hip-Joint in 37 Cases of Suppurating Tuberculous Disease.** *Brit. M. J.*, 1913, i, 331.

By Surg., Gynec. & Obst.

The author reports 37 cases in which the operation of excision of the hip joint was performed. In all his cases there was evidence of suppuration, some with and some without sinuses. Most of the cases were young children, some were over 12, a few were adults, and one case operated on in 1912 was 57. He has had no death from the operation. He uses the anterior incision, starting just below the antero-superior spine and running downward, passing between the sartorius and the tensor vaginæ femoris and then between the rectus and gluteus minimus. The neck is divided with the Adams saw and the soft parts around it cut with the scissors. He removes all the tuberculous tissue possible. In his first 24 cases he removed distinct sequestra in 10, and mentions this as one of the strongest arguments for this radical operation. The cavity is scraped and flushed with 1 in 10 biniodide solution, and carbolyzed iodoform is applied to the wall. All cases were drained, but in most the discharge ceased in 2 months. He examined all the cases possible operated on in the last 12 years and communicated with all possible who were not examined. In nearly all cases flexion to a right angle was possible. Lateral movements were not so good. The longer after the operation, the greater was the tendency for the trochanter to ride high on the dorsum ilii. The shortening in the cases he examined ranged from 2 to 2½ inches, but in one case 9 years after operation there was 4 inches shortening. There



was marked instability of the joint. In spite of this shortening and instability of the joint the author feels that this should be the operation of choice rather than the mere emptying of the pus sac. He says he doubts if the flail joint is worse than the ankylosed portion which might be obtained by putting the stump of the femur into the acetabulum and holding it there until ankylosis resulted. He reports 37 cases in more or less detail. Two patients died of tuberculous meningitis 3 months after the operation, and one died  $3\frac{1}{2}$  years later of tuberculous meningitis.

M. S. HENDERSON.

**Hertzler: Quadriceps Transplantation in Paralysis.** *J. Mo. St. M. Ass.*, 1913, ix, 253.

By Surg., Gynec. & Obst.

The patient, a girl aged 15, had acute anterior poliomyelitis three years previously, resulting in the disuse of both legs and the enfeebled use of the upper extremities; because of two years spent in bed the knees were flexed to an angle of 45 degrees; the quadriceps and hamstring muscles of the left leg were entirely paralyzed; the right side showed normal flexion of the leg on the thigh but a paralysis of the quadriceps.

A modification of Krause's operation was insti-

tuted, i. e. a transplantation of the hamstrings to take the place of the quadriceps; a fairly long incision is made over the biceps, the muscle loosened as far as the insertion of its short head, the tendon severed from its attachment to the fibula, and the muscle carried through an opening made by separating the body of the vastus externus from the femur, thus giving a more direct pull for this muscle; the semitendinosus, semimembranosus and gracilis are freed in like manner and made to perforate the body of the vastus internus; the sartorius is severed through the upper incision; the four tendons are then made to approach the patella, where they are fastened and the leg placed on a posterior splint.

In this particular case only the biceps and semimembranosus were transplanted, and since the vastus internus was markedly atrophied it was not perforated by the semimembranosus; but the author thinks this was an error in technique, for it placed the muscle at a distinct mechanical disadvantage. However, the result was very satisfactory, considering the extreme severity of associated lesions.

Hoffa, Böcker, and others have demonstrated the utility of this operation in quadriceps paralysis.

R. B. COFIELD.

## ORTHOPEDIC SURGERY

### DISEASES AND DEFORMITIES OF THE SPINE

**Kaneko: Congenital Lateral Curvature of the Spine.** *Am. J. Orth. Surg.*, 1913, x, 396.

By Surg., Gynec. & Obst.

Kaneko states that the deformity as here presented is one of the rarest so far as experience goes and as the facts are shown by available literature. Mery, Roy, and Geschen have reported such similar cases in the seventeenth century, but little notice has been taken of these reports. From the next century, when Fleischmann, Rokitsky, Meyer, and Guérin, reported the results of their studies on this subject, men began to consider the deformity as a practical addition to the ills of humanity. Many of the reported cases were not taken from living subjects, but from skeletons. They, therefore, only attracted the attention of the anatomists.

One skiagram, one photograph of the child, and one of the skeleton are contained in this paper, with the report of two cases, one of which is from the skeleton, and a review of the etiology and pathology, symptoms, diagnosis and treatment.

He believes that the causes which bring about such deformities are various, and enumerates:

1. Malformations of vertebra, the bone itself or its articulation: (a) Deformities of the vertebra; (b) numerical variations in the spine; (c) with spina bifida; (d) adhering of the transverse process of the fifth lumbar vertebra with the crest of the ilium; adherence between the upper dorsal vertebrae with

a congenitally elevated scapula; (e) the result of the amniotic pressure in the later months of intra-uterine life.

2. The relation of scoliosis to other deformities: (a) Those occurring with congenital dislocation of the hip; (b) cases caused by paresis or paralyzes of spinal muscles; (c) cases with cervical ribs; (d) cases with foetal rickets.

HENRY BASCOM THOMAS.

**Dhérisart: The Operative Indication in Fractures of the Spine** (Les indications opératoires dans les fractures du rachis). *Thèse de doct.*, Paris, 1913, Jan.

By Journal de Chirurgie.

The author reviews the present ideas on the question of intervention in fractures of the spine, including different works on the subject and, the report of Auvray and Sencert in particular. The article ends with eighteen case reports, six of which have been published. A résumé of the article follows:

CASE 13. Man, 27 years of age, fell two stories. Fracture of the twelfth dorsal and first lumbar vertebrae with deformity; complete paraplegia with anaesthesia; retention of the urine and feces. Reflexes abolished.

Laminectomy: The cord was found to be crushed, death followed with a temperature of  $43^{\circ}$  C. and pulse 110. Autopsy showed a complete destruction of the body of the first lumbar vertebrae.

CASE 14. A young man, 15 years of age, fell 6 meters. All the signs of a complete lesion of the



cord were present. Laminectomy was performed on the third day. The cord was found to be divided; results were negative, and death followed five months later.

**CASE 15.** A man, 50 years of age, was crushed by a locomotive. He remained one month in the hospital for fracture of the clavicle and numerous bruises. Later he returned to the hospital because of pain in the back. He had no difficulty in walking, nor in urination. An X-ray picture showed fracture of the 12th dorsal vertebræ. After being in a cast of Bonnet for five weeks he left the hospital cured.

**CASE 16.** A man, 32 years of age, fell ten meters. A complete paraplegia with anæsthesia was present. Incontinence and impotency only followed secondarily. Signs of fracture of the eleventh and twelfth dorsal vertebræ were present. Laminectomy was performed six weeks after the accident. The meninges and cord were intact. The wound was closed. At the end of the sixth week, voluntary urination reappeared, followed by the recovery of potency, of movement and of sensation.

**CASE 17.** A woman, 34 years old, met with an automobile accident. The first and second lumbar vertebræ were fractured. Signs of complete section of the cord were present. Laminectomy was performed. A fragment of the bony arch of the first lumbar vertebræ had pierced the posterior surface of the cord. Blood clots were removed; no improvement; death occurred six months after.

**CASE 18.** A man, 40 years of age, fell from a roof. Complete motor paralysis was present. At the end of five weeks laminectomy was performed. The cord was markedly compressed. Results: voluntary urination on the same night; later limited movement in the lower extremities; but patient could not walk without crutches.

J. L. ROUX-BERGER.

**Jones: Vertebral Osteo-Arthropathy.** *Am. J. Orth. Surg.*, 1913, x, 354. By Surg., Gynec. & Obst.

Jones has observed two cases of vertebral osteoarthropathy (Charcot's disease of the spine) during the past year, and considers that, of the many manifestations and sequelæ, involvement of the vertebral column is one of the rarest conditions met with. As far as he has been able to ascertain from the careful search of the literature, there are up to the present time but 30 authentic cases reported.

He reviews the literature carefully and thoroughly, quoting extensively many interesting facts regarding this disease and clearly reporting his own cases, one of which is included.

**CASE 2.** Mr. X. Y., age 53, married, gave a negative venereal history. He had always been a strong, healthy man up to 17 years ago. At that time, while riding a horse in a running race, he was thrown from his mount, striking the ground on his back. He was unconscious for several hours, but was not severely injured, and in a day following the accident he was up and about his work again. Two years following the accident he began to complain

of attacks of dizziness, but he never lost consciousness. Girdle and lightning pains appeared and ataxia manifested itself, together with some digestive disturbance.

Three years ago an ulcer developed on the sole of the foot, over the head of the first metatarsal. The ulcer did not heal and discharged for several months; finally the great toe was amputated.

About this same time he first noticed a deformity at the lower portion of the spine. This "mass" was not painful and the skin over it was not reddened. He also noticed that his back was becoming curved. This deformity of the back increased and walking became more difficult. No incontinence of feces, but there was a partial loss of control of the bladder.

**Examination.** A man weighing 112 pounds. Walks with a marked ataxic gait. There is distinct dizziness upon bending forward, and swaying from side to side is very noticeable when standing with the eyes closed. There is no nystagmus, and there is no pupillary response to light.

**Reflexes.** The right and left knee-jerks are both absent, as are the tendo achillis reflexes. The cremasteric reflex is present but delayed. There is no ankle clonus. The plantar reflexes are absent. Tactile sensations are diminished in both lower extremities. The pain sense is greatly lowered, but the pressure sense is fairly accurate.

There is a marked angular kyphosis of the third and fourth lumbar vertebræ and a distinct scoliosis of the spine in the dorsal and lumbar region. This lateral deviation of the spine is to the left. Opposite the eleventh dorsal vertebra and extending down to the fourth lumbar on the left side of the column is a hard mass, due to infiltration of the sheath of the erector spinæ muscle. There is no fluctuation or sign of abscess. The right and left hips and both knees and ankles are normal, and no other arthropathic lesions are present.

There is a partial loss of control of the bladder but no incontinence of the rectum. The Wassermann reaction is positive.

The radiogram shows a marked scoliosis of the lower four lumbar vertebræ. The fourth lumbar segment is seen to be displaced from the third lumbar vertebra, and there is marked roughening and absorption of portions of the articular surfaces with large, irregular, hypertrophic masses at the upper and lateral margins of the fourth lumbar segment.

In conclusion he states that (1) the vertebral involvement occurs in tabetic subjects; (2) in both cases a positive Wassermann reaction was obtained, although no syphilitic history was elicited; (3) the arthropathy was limited to the vertebral column; (4) in both instances confirmatory radiograms were secured.

HENRY BASCOM THOMAS.

**Miller: Prenatal Growth of the Human Spinal Cord.** *J. Compar. Neurol.*, 1913, xxiii, 39.

By Surg., Gynec. & Obst.

The object of this work is to throw light upon the absolute and relative prenatal growth of the cord



as a whole and of its various regions and parts. The investigation was based upon the results obtained from five human embryos, as follows: an 11 mm. embryo, of the fifth week; a 17 mm. one, sixth week; 31 mm., eighth week; 65 mm., 12th week; and 150 mm., five months. The measurements were from crown to rump.

The methods of preparation of the embryos and procedures for magnification and measuring are given. The upper level of the cord is assumed to be where the first section shows filaments of the first pair of spinal nerves. The length of a segment is determined by taking all sections between the uppermost point of attachment of a nerve to the cord and the corresponding point of the next pair of nerves caudal to the first. The exact line dividing the gray from the white matter is often indistinct. In the younger embryos a horizontal line, drawn from the small recess in the boundary zone of the gray matter to the nearest point of the central canal, arbitrarily separates the anterior and posterior horns. The lateral horn where present is included with the anterior. The white matter is divided into anterior, lateral, and posterior columns. The line of emergence of the fascicles of the nerve roots separates the anterior and lateral columns. The dorso-lateral sulcus at the attachment of the posterior roots divides the posterior and lateral columns.

In the 11 mm. embryo indications of the cervical enlargement appear. This cord in general tapers to the caudal extremity. In the 31 mm. embryo, the lumbar enlargement is definitely shown, though it may be present at 17 mm. In the older cords, both cervical and lumbar enlargements are very prominent. The actual rate of absolute growth of the cord is much more rapid during the early prenatal months than during the later periods. The cervical region forms approximately 37 per cent of the whole cord in the 11 mm. embryo, and decreases to 28 per cent in the five-month fetus. This compares with 36 per cent and 31 per cent of the whole in the child and adult respectively. In the thoracic region there is a gradual increase from 32 per cent in the 11 mm. embryo to 41 per cent in the mid-fœtal stage, comparing with 45 per cent in the child and 50 per cent in the adult. The lumbo-sacral region of the cord increases from 31 per cent in the 11 mm. embryo to a maximum of 38 per cent at 31 mm. In the mid-fœtal period there is a decrease to 31 per cent, comparing with 18 per cent in both child and adult. This decrease in relative size which occurred from the second month of prenatal life and extends into the post-natal period is associated with the shortening of the cord in the vertebral canal. The decrease is most marked in the sacral region of the cord. It appears that the thoracic region appears to grow at the expense of the cervical region up to about the second month of prenatal life and thereafter at the expense of the lumbo-sacral region.

The gray matter constitutes about 38 per cent of the whole cord in the 11 mm., embryo increasing in the 65 mm. and decreasing then so that in the child

it forms 27 per cent and in the adult less than 20 per cent. In the cervical and the lumbo-sacral region, the gray matter is relatively greater in amount than in the thoracic. In the 11 mm. embryo the anterior horn is three times as great as the posterior. Later the ratio approaches that found in the adult cord.

The white matter increases from 13 per cent in the 11 mm. specimen to 46 per cent of the cord in the five-month specimen, comparing with 73 per cent in the child and 80 per cent in the adult. The white matter increases relatively in different regions as the cord as a whole.

The ependyma form nearly 50 per cent of the entire cord in the 11 mm. embryo. This is followed by a rapid decrease so that by the fifth month they form only 0.59 per cent of the whole. This relative decrease is accompanied by a decrease in absolute size from the 17 mm. specimen. With the exception of a slight dilation at the extremities, the canal is fairly uniform in caliber in the earliest stages, but from 31 mm. onward it is more constricted in the thoracic region.

W. H. BURLIG.

**Elsberg: Experiences in Spinal Surgery; Observations upon 60 Laminectomies for Spinal Disease. *Surg., Gynec. & Obst.*, 1913, xvi, 117.**

By Surg., Gynec. & Obst.

This is a report of 60 primary and 10 secondary laminectomies performed by the author—22 times for tumor, 9 for section of posterior roots, 4 for inflammatory bone disease, 5 for old fracture of the spine, 2 for syringomyelia, 1 for intra-medullary cyst, 1 for aneurism of posterior spinal vessels, and 16 for various other affections. The author declares that there is no reason why a patient with a positive Wassermann reaction may not also have a spinal tumor, and that it is as great an error to allow a patient with a suspected spinal tumor to become totally paraplegic while antispecific remedies are being given as to allow a patient with a suspected brain tumor to become blind while internal remedies are being tried.

The late versus the early symptoms of spinal tumor are considered; with long stasis of fluid above a spinal tumor, symptoms may occur which would make one suspect a higher level. Secondary degenerations may in rare instances cause a shifting upward of the level of sensory and motor symptoms.

The danger from the escape of cerebrospinal fluid when the dura is opened is small, and the author has never seen serious symptoms caused thereby.

After some remarks upon the bladder disturbances which may follow a laminectomy, the author calls attention to a marked abdominal distention which also often follows laminectomy in the mid-dorsal region. Then follow a discussion of the technical features of the operation and remarks upon the appearance of the spine and the functions of the vertebral column after complete laminectomy. Regarding the surgical aspects of spinal decompres-



sion, the author feels that the conclusion is justified that the opening of the spinal canal may and often does have a profound effect upon the spinal cord, and may act beneficially upon some diseases whose nature is as yet unknown.

Extreme conservatism is indicated in recent fracture of the spine, but there are many old fractures, with narrowing of the spinal canal from new bone formation or angulation of the cord from vertebral dislocation, which can be very much benefited by operation.

There is no more satisfactory operation than the removal of an extramedullary spinal tumor. The danger of the operation is small. Intramedullary tumors are to be removed in two stages by the author's "extrusion" method.

### MALFORMATIONS AND DEFORMITIES

**Carvallo: Megalodactylitis** (Mégaldactylie). *Rev. de méd. e hyg. pract.*, 1912, i, 383.

By Journal de Chirurgie.

A new case is described of what, with Caubet, we have designated under the name of "hallomegalie" in order to distinguish it from congenital hypertrophy of the digits (macrodactylitis or megalodactylitis). The author, who believes his case to be original, does not seem to have made a very serious bibliographic research, since other writers have been able to find 23 similar observations.

The case which he reports is that of a child, 8 years old, who had, since birth, a hypertrophy of the second and third toes of the right foot. As this condition interfered considerably with walking (although there was no pain), an operation was decided upon. The two toes were twice as long as the others. They formed a single mass on the dorsal surface of which rudimentary nails were present. A metatarsal phalangeal disarticulation was performed. Examination of the specimen showed the skin to be thick and hard, the nails rudimentary and the bone hypertrophic. The deeper structures were composed of cartilaginous tissues. The author does not speak of any plantar fat, although examination of the picture accompanying the article would seem to show that it was present.

SALVA MERCADÉ.

**Roth: Bow-legs in Small Children.** *Practitioner*, 1913, xc, 431.

By Surg., Gynec. & Obst.

The article deals only with the rachitic outward bowing of the tibia and fibula of small children. Roth divides the cases clinically into the mild and severe types. The treatment of the mild forms consists in the application to the inner side of the leg of padded splints extending from the knee joint to the bottom of the shoe. This splint is firmly bandaged to the leg and worn during the day. This treatment should be kept up until the leg is straight, the period being usually 3 to 12 months.

In the severe cases, the author straightens the leg by breaking it over a suitable fulcrum by manual force. The apparatus consists in a table low enough

so that the operator may apply force vertically down. On the table is a firm pillow upon which the patient lies and the "orthopedic wedge" over which the leg is broken. The type of wedge is most important. The author recommends Krohne and Sesemann pattern with broad base and rounded apex covered with India rubber. The outer side of the leg is placed on this block at the exact center of the curve. The operator grasps the leg with one hand below and one above the site and gradually exerts more and more force in a vertical direction until the bones break. The fibula usually breaks first, followed later by a second snap with correction of the deformity which shows that the tibia has broken. The leg is then held in corrected, but not overcorrected, position by two lateral splints as described in the treatment of milder cases. The splints are worn for six weeks, the child being allowed to walk at the end of four weeks. Antirachitic diet is carried out during both types of treatment.

DEFOREST P. WILLARD.

**Le Breton: Congenital Absence of the Fibula.**

*Am. J. Orth. Surg.*, 1913, x, 408.

By Surg., Gynec. & Obst.

Le Breton reports two typical cases of congenital absence of the fibula, which resemble each other. There were absence of the fibula, some tarsal bones, and some toes with their metatarsals; shortening and bowing of the tibia, absence of the lower epiphysis of the tibia, and eversion of the sole. In one of the cases a good result, functionally, was obtained by arthrodesis of the ankle joint, tenotomy, and osteotomy for the accompanying knock-knee.

**Horwitz: Weak Feet in Children.** *Interst. M. J.*, 1913, xx, 149.

By Surg., Gynec. & Obst.

Little stress should be laid upon the low arch as a symptom of the first importance in diagnosing a case of flat-foot. The foot deviates from the normal in shape, function, and value. In the young there are four possible causes of weak or flat foot: (1) undeveloped musculature and ligamentous structure; (2) acute infectious diseases; (3) knock-knee; and (4) bowlegs. A great contrast is noted between children of school age and those above. In the former a painless deformity is noted; in the latter a painful foot with little or no deformity. In the latter the disturbances are due to a sudden change from a quiet life to one of great activity, especially an activity requiring exertion of the feet.

Intoeing, considered by parents a grave deformity, is in most cases a beneficial condition. In cases of knock-knee it is an unconscious attempt on the part of the child to correct the extreme eversion of the feet. This is noted in the separation of the great toe from the rest of the foot. This is a characteristic difference between a flat-foot due to knock-knee and one due to bowleg, where the entire foot is everted. Where the pigeon-toe is a corrective position it is unwise to attempt correction. It would exaggerate the original deformity at the



knee and destroy what compensation had been attained. In all cases of intoeing it would be wise to examine the knees. Flat-feet in combination with knock-knees should be corrected, as this will also tend to re-establish the line of gravity and improve the knock-knees. In bowlegs the flat-foot should be corrected with caution, as this will exaggerate the knee condition. The feet should not be thrown into inversion. It is a safe rule that a compensated foot, either an intoeing or an outtoeing, should not be interfered with.

During adolescence two types of weak feet are seen, one in the male and the other in the female. They are due to the general disturbances arising at this period, mainly to increased vascularity in the bones. The increased superimposed weight and heightened bodily activity weaken the softened tarsal bones. In the male, the large bony foot with scant muscle development is seen; in the female, the small, flabby, shapeless foot. Both types are weak and out of proportion to the body weight. In the treatment, development of the musculature should be our main object, and we should not be satisfied with merely correcting the deformity. The common custom of giving plates is injurious, as this merely acts as a splint and prevents development. Pads built in the shoe measured to accurately fill the arch are of great value.

M. G. SEELIG.

**Bankart: On the Treatment of Club-Foot in Early Childhood.** *Clinical J.*, 1913, xli, 282.

By Surg., Gynec. & Obst.

Bankart considers that in infancy and early childhood congenital club-foot may be converted into one almost indistinguishable from normal. The results in neglected cases cannot be compared with what might have been obtained by treatment in infancy, which is always possible inasmuch as practically every case is seen at or soon after birth by a physician. He describes the pathologic anatomy of congenital club-foot, in order that the principles upon which the treatment are founded may be more readily understood. Bankhart's method of treatment is by tenotomy, manipulation, and fixation of the foot in the overcorrected position. He does not believe that a club-foot is necessarily cured even when in a corrected position, for there is a tendency to relapse as the bones of the foot are altered in shape to conform to the deformity. Therefore, careful orthopedic after-treatment is essential for a period of several years or more, so that the bones may adapt themselves to the new position. Radical operations are reserved for neglected cases in which other means have failed; the removal of bone approximately corrects the attitude of the foot, but there always remains some part of the displacement untouched. In the true sense of the word the deformity is not corrected, but effects a compromise by providing a more or less stiff foot in a corrected attitude; moreover careful orthopedic after-treatment is as essential as with any other method.

CHARLES M. JACOBS.

**Stern: Spontaneous Gangrene and Allied Conditions in Orthopedic Surgery.** *Am. J. Orth. Surg.*, 1913, x, 381.

By Surg., Gynec. & Obst.

Spontaneous gangrene, Raynaud's disease, erythromelalgia, akrocyanosis and intermittent claudication are allied conditions and play an important rôle in orthopedic surgery. The underlying cause of these conditions has not as yet been fully established. The author briefly reviews the five theories of the etiology: (1) Chronic spinal disease; (2) vasomotor trophoneurosis; (3) localized arteriosclerosis; (4) primary thrombosis with canalization and downward extension of the process; (5) ascending thrombo-angiitis and periangiitis of the arteries and veins.

Besides the usual symptoms of pain, muscle cramp, localized asphyxia, coldness, loss of arterial pulse, etc., the author describes the occurrence of painful discrete dark red or bluish papules on the hands, feet, arms, and legs in certain of these cases. The papules appear in crops and last only for a few days, disappearing suddenly. At times the papules become the seat of small areas of superficial gangrene, and in diagnosis this condition may become very puzzling.

The progress of the disease is not uniform in all cases, in any given case it is usually not continuously progressive. The final outcome may be gangrene, with amputation or death. Many forms of the disease which in the past were thought never to lead to gangrene, such as erythromelalgia, intermittent claudication, etc., are not now so regarded.

The diagnosis is difficult in the early stages. The persistence of pain along the chief arterial trunks, the cold, clammy, cyanotic extremities, the loss of the arterial pulse and the presence of the transient, deep colored, painful papules, or cold discolored patches of skin are the leading symptoms.

The differentiation from flat-foot is very important. Many of the cases have a flat-foot and have often been under treatment for same. Lovett makes it the rule to examine the dorsalis pedis and post-tibial arteries in all cases of "resistant" flat-foot. Freiberg says, "The symptoms of static flat-foot come from the use of the foot. When the patient remains off the foot the symptoms vanish. Where this is not the case an examination of the circulation should be made."

The prognosis is grave, as treatment is not always successful. Absolute rest; bed for at least six months, combined with Cushing's hyperæmia used twice daily is the most successful form of treatment. Care must be taken not to perform minor surgical operations on such feet, as these are sometimes followed by gangrene.

Stern reports 14 cases, of which 7 had marked flat feet and had been referred to the orthopedist for treatment for same. Only five of these cases were seen by the general surgeon, and that, late in the course of the disease, for the purpose of amputation.



## SURGERY OF THE NERVOUS SYSTEM

**Leriche: Three Cases of Radicotomy for Tabetic Gastric Crises** (Trois radicotomies pour crises gastriques du tabes); and, **Elongation of the Solar Plexus for Tabetic Gastric Crises** (Élongation du plexus solaire pour crises gastriques tabétiques). *Lyon chir.*, 1913, ix, 205 and 230.

By Journal de Chirurgie.

In these two reports the author gives the history of two tabetics recently operated for gastric crises. The first case was that of a woman 26 years old, who was suffering with very violent gastric crises, which Prof. Pick had been unable to relieve by any of the usual therapeutic methods. Leriche sectioned the fifth, sixth, seventh, eighth and ninth posterior dorsal roots extradurally (Gulcke's method). The post-operative course was uncomplicated. The patient at first experienced great relief, but at the end of three weeks, when she wished to resume her life as a prostitute, the pain reappeared. On the whole, however, the results were thoroughly satisfactory up to the end of the fourth month. At that time, the patient exhibited marked paroxysmal phenomena (abdominal pain, oppression, and marked tachycardia), which gave the impression of a solar crises. These symptoms seemed to indicate that the patient was suffering from peripheral sympathetic neuritis. Accordingly, at the end of the sixth month, Leriche performed the operation of stretching the solar plexus.

In his second report, this case is mentioned to show that this operation is not as dangerous as has been claimed. It has been performed four times at Lyons with no fatal results.

The second case was that of a tabetic who had been blind for 12 years. Since 1905 she had had persistent gastric, intestinal, and rectal crises, which had led to the formation of a morphin habit. On June 24, 1912, Leriche performed an extradural section of the eighth, ninth, tenth, eleventh and twelfth posterior roots. In spite of the employment of Gulcke's method, cicatrization was rather slow, and for a few days there was a slight discharge of cerebrospinal fluid. For the first month the result appeared very satisfactory. The patient stated that she had not felt so well in five years. But during the second month the intestinal crises reappeared. In addition, the patient was suffering with a markedly prolapsed left kidney. In order to complete the result already obtained, the twelfth intercostal and the abdomino-genital nerves were avulsed. At the same time fixation of the kidney was performed. After a period of relief the patient's condition became worse, and at the end of the third month she herself demanded reoperation. This time, Leriche sectioned the fourth, fifth, sixth and seventh posterior roots. The operation was very difficult on account of the presence of numerous bands of meningeal adhesions, the earlier operations having left the dura mater very adherent.

The patient died of hæmorrhachis the following night.

The specimen obtained at the autopsy enabled the author to make a very exact comparison of the results obtained by each of the two varieties of radicotomy. At the end of this double report Leriche discusses the criticisms which have been directed against surgical intervention in tabetic crises and in particular against radicotomy. In his personal series of nine cases, the mortality was 33 per cent. There appears to be no doubt as to the value of the operation. Unfortunately, as in all operations for neuralgia, definite relief is not always obtained after the first operation, and often repeated operations are necessary. Whenever, therefore, the visceral crises appear to be due to a peripheral neuritis, the indications seem to begin by treatment of the solar plexus, and to reserve operation on the roots for those cases which from the start are evidently radicular in origin or those in which the pains have reappeared after operation on the solar plexus.

G. COTTE.

**Langbein: The Treatment of Sciatica with Epidural Injections.** (Beitrag zur Behandlung der Ischias mit epiduralen Injektionen). *Deutsche med. Wchnschr.*, 1913, xxxix, 20.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Like Læwen, Langbein used a 1 per cent novocaine bicarbonate solution (sodium bicarbonate 0.25; sodium chlorate 0.5; novocaine 1.0; distilled water ad 100.0). It was injected into the hiatus sacralis. The latter is not always easy to find. The patient assumes a sitting posture and the injection is made as slowly as possible. The symptoms disappear in 15 to 20 minutes. Twelve patients received such injections and seven of them were cured and have remained in perfect health. Before making the injection it is advisable to treat patient for fourteen days in the usual manner with antineuralgics. TACHAN.

**Symmers: A Recurrent Neuroblastoma of the Scapular Region.** *J. Am. M. Ass.*, 1913, ix, 337.

By Surg., Gynec. & Obst.

Symmers describes a recurrent neuroblastoma in a man 44 years of age. The tumor was enormous in size and occupied the concavity of the right scapula and the corresponding axilla, necessitating amputation at the shoulder joint. Histologically the tumor was composed of undifferentiated nerve cells or neuroblasts provided with delicate fibrils, the cells being arranged diffusely, or in the form of rosettes, around tangled masses of fibrillated or homogeneous substance staining pinkish with eosin. In commenting upon thirteen closely related cases, most of which were recorded under the mistaken diagnosis of sarcoma, Symmers states that nine occurred in children ranging from stillborn to nine years of age, and that in all of them the origin was



determined in the suprarenal capsule, where nests of neuroblasts are not infrequently to be found, even in normal circumstances. In children the tumor gives rise to two sets of symptoms. In one group the growth is attended by secondary exophthalmos, ecchymosis of the lids and neoplastic infiltration of the calvarium and regional lymph nodes; the other by rapidly increasing distention of the abdomen due to infiltration of the liver and unattended by ascites or jaundice. In five cases, including the one noted by Symmers, the tumor occurred in adults, but the clinical manifestations were bizaare and do not lend themselves to classification.

**Behrend: A Case of Solitary Paralysis of the Suprascapular Nerve Due to Trauma** (Ein Fall von isolierter traumatischer Lähmung des Nervus Suprascapularis). *Berl. klin. Wchnschr.*, 1913, I, 249. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Behrend has already published 26 cases of an identical nature. This case was that of a blacksmith who received a moderately blunt blow from behind, on his shoulder. As a result the supra- and infraspinous muscles gradually underwent complete atrophy. The patient experienced a gradual and increasing difficulty in raising the arm and rotating

it outward. In some of his cases, Behrend describes a habitual subluxation of the shoulder joint. When the function of the arm is seriously disturbed a plastic operation may prove useful. For this purpose a neighboring nerve trunk from the cervical plexus can be utilized or a muscular flap can be transplanted from the trapezius or the latissimus dorsi. MEYER.

**Ingebrigtsen: Studies of Degeneration and Regeneration of Axis Cylinders in Vitro.** *J. Exp. Med.*, 1913, xvii, 182. By Surg., Gynec. & Obst.

Preliminary results of experiments show that brains of chick embryos, of cats six weeks old, of rabbits two months old, and of dogs three weeks old, when cultivated in vitro, develop long filaments, which must be considered as true axis cylinders. Similar structures develop from spinal ganglia of rabbits seven months old and of rabbits two months old. When severed from their origin these threads undergo degenerative changes, which do not appear after nine hours, but which are seen after twenty hours and continue until, in the course of the following two days, the thread degenerates completely. After twenty hours the development of new axis cylinders from the central part of the cut fibres is observed. JAMES F. CHURCHILL.

## DISEASES AND SURGERY OF THE SKIN AND APPENDAGES

**Harriehausen: Autovaccination for Furunculosis in Nurslings** (Autovaccination der Säuglingsfurunkulose). *Therap. Monatschr.*, 1913, xxvii, 106. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In several cases of furunculosis in infants, good results were obtained by the use of autovaccine. The preparation of autovaccine is so simple that it is within the means of the smallest laboratory. This treatment is to be recommended in every case of infantile furunculosis in hospitals. In general practice the use of manufactured vaccine must suffice, which does not completely equal the autovaccines in the action. HOLSTE.

**Hertzler: The Principles of the Technique of Skin Grafting.** *Interst. M. J.*, 1913, xx, 135. By Surg., Gynec. & Obst.

Hertzler traces the minute histological changes that occur during the process of growth of grafted skin, and on this basis he discusses the proper

technique of skin grafting. Furthermore, he devoted a part of his study to the area to be grafted, and shows that on histological and physiological grounds it is much better to cut down granulations smoothly with a sharp knife than to curette them away, thus leaving an uneven bed from which all oozing must cease before grafts are applied. He shows that if the hæmorrhage is stopped by the application of styptics, the serum which is so essential to the life of the grafts will be coagulated, and as a result of this the grafts are robbed of necessary nutriment. The proper way to stop hæmorrhage is by pressure with a dry sterile pack of gauze. Another essential in successful grafting is that the grafts should be cut and immediately grafted before they have a chance to be dried by contact with the air. They should not be allowed to come in contact with salt solution, for the salt solution washes away the serum which tends to cement the grafts in place and to furnish them a nutrient bed. M. G. SEELIG.

## MISCELLANEOUS

### CLINICAL ENTITIES—TUMORS, ULCERS, AND ABSCESES

**Packard: A Possible Factor in the Causation of Cancer.** *Surg., Gynec. & Obst.*, 1913, xvi, 190. By Surg., Gynec. & Obst.

Study of the natural history of cancer, and inductive reasoning, lead the author to the conclusion

that there must be some microbic agency which is the active cause of the disease.

Accepting as a fact that cancer is of microbic origin, he views with profound interest the further fact that there is a strongly implanted immunity to cancer in the human family. He finds this proven by the fact that surgeons, physicians, and nurses, who in the ordinary routine of their daily work



deal frequently and over a long period of time with cancer disease and cancer discharges, rarely develop cancer in their own bodies. He therefore accepts the further fact that those who develop cancer have in some as yet unknown way lost their immunity, and their tissues furnish a favorable soil for cancer growth; this being proven by the fact that those who already have cancer are susceptible to autografting, i. e. their resistance to cancer has been lost.

That immunity is sometimes regained is also indicated by the considerable number of apparently hopeless cancer cases which spontaneously take a turn for the better and recover.

The fact that cancer is far more frequent among the civilized nations of the earth is held by the author to be significant, and he reasons there must be some cause for this.

The fact that demineralization of the foodstuffs of civilized peoples has been going on for centuries seems to him suggestive that food salt starvation may be a negative factor in the causation of cancer.

His investigations show that along the equatorial belt cancer is so rare that it is a negligible quantity; there the food supplies are largely of fruits and vegetables but little changed by manufacture or cooking — they contain their full and normal content of food salts.

In the highly civilized and densely populated temperate zones of the earth cancer reaches its highest percentage; it is there that modern methods of manufacture of foodstuffs and refined methods of cooking rob the staple articles of food of their natural life-giving food salts. The author concludes that it is among the eaters of polished rice and denatured flour that cancer reaches its highest percentage.

**Abbe: How Can We Improve the Results of Our Operations for Cancer?** *Surg. Gynec. & Obst.*, 1913, xvi, 185. By Surg., Gynec. & Obst.

The mortality records of the census area of the United States show that the death rate from cancer per 100,000 inhabitants has increased from 64 in 1900, and 69 in 1905, to 76 in 1910. In the state of Massachusetts, where the records go back further, the cancer death rate doubled from 1850 to 1875, and since then it has nearly doubled again.

The author states that all recognize that cancer operations are too late, too limited, and often done on too local a diagnosis. Even in early cancers of the breast, before the metastatic growths appear in the axilla, reports from large clinics show that one in five dies from cancer after a radical operation. The technique of the operation has something to do with the recurrences. In the period when breast operations were done from the chest towards the axilla, recurrences appeared in the axilla. Now, with the type of operation starting at the axilla and working toward the chest, the recurrences appear in the chest wall. This is due to manipula-

tion of the cancer tissue, squeezing it, etc., and perhaps somewhat also to the rough methods used in preparing the part for operation, or in examining the patient before operation. The number of recurrences resulting from the above reason and also from not doing a radical operation has led the laity to entertain the well-founded idea that cancer operations in general are unsatisfactory and do not cure.

To get better results, certain well-established conceptions must be enforced. Early eradication is at present the only reliable method of treating cancer, and operation in general is the most satisfactory method, though energetic caustics and radiotherapy have their fields of usefulness. Fewer recurrences will follow painstaking diagnosis and complete eradication at the primary operation, with the minimum manipulation possible. During the last six months several suggestions have been brought forth by Wassermann, Fischera, Berkley and Beebe which bring hope for the future in the cure of cancer.

To get cases earlier for operation, the medical student must be educated to appreciate the importance of early diagnosis and prompt eradication. The practitioners must be educated through the journals so they will seek an early diagnosis, and especially to think of cancer in the cases of prolonged troubles of many types that have not raised suspicions of cancer. Women must be educated to seek semiannual examinations of breasts and uterus at the hands of the physician.

The most hopeful line of improvement in cancer treatment is in prophylaxis. The layman must be educated to avoid persistent irritation and to watch the results of trauma. If injury does not heal promptly he should seek a physician's advice, for sarcoma or carcinoma may develop at the trauma site. The physician must keep constantly in mind the precancerous conditions, and treat them so efficiently that the observable cancers never develop.

EDWARD L. CORNELL.

**Rous and Murphy: Variations in a Chicken Sarcoma Caused by a Filterable Agent.** *J. Exp. Med.*, 1913, xvii, 219. By Surg., Gynec. & Obst.

Rous and Murphy have studied a transplantable sarcoma through 32 successive series of transfers. They have shown in a previous paper that it may be transferred by means of a filterable agent. The present paper describes the variations which have been noted in the tumor. The growths in 217 fowls have been studied. The original tumor was a spindle-cell sarcoma while in some of the more recent ones the cells have tended to be spherical and a giant-cell form has been met with. Of late the growth has frequently given rise to fatal hæmorrhage from its substance.

Some of these changes are probably due to the varying local conditions in the host. Some of them seem to be an expression of changes in the causative agent of the growth.

JAMES F. CHURCHILL.



**Chachloff: Asphyxia of Malignant New Growths**  
(Erstickung maligner Neubildungen). *Russk. Vrglch.*,  
1913, xxii, 157.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Oxygen is necessary for cell-division. Tumor cells consume oxygen intended for neighboring cells and thus cause their degeneration. The avidity for oxygen is seen by the growth of tumor cells along vascular tissue, the proliferation of embryonic vessels, and the occurrence of mast-cells (the latter being the oxygen bearers). Using these facts as a basis, the author suggests a treatment of tumors by depriving the tissue of oxygen. He uses leucomethylen-blue for this purpose. This color enters the nucleus and does not cause the formation of methemoglobin when it enters the blood, as methylen-blue does. The cells degenerate and die. Thus the author could bring about an alopecia which he considers a suffocation of the hair producing tissue, while the tissue about the hair remains intact. By injecting the dye into a certain vessel a great area nourished by it was suffocated.

BRAUDE.

**Gaskill: Melanotic Sarcomata Resulting from the Irritation of Pigmented Nævi.** *J. Am. M. Ass.*, 1913, lx, 341.

By Surg., Gynec. & Obst.

Gaskill reports a case of melanotic sarcoma appearing externally, and does not include in his discussion the non-pigmented or the multiple idiopathic hæmorrhagic type of Kaposi. He presents Johnston's classification of the origin of these melanotic tumors. His case illustrates the harm which can be done by irritating this most malignant type of skin cancer. Palliative measures are absolutely contraindicated and the nævi should not be disturbed unless there is a slight irritation, peripheral extension, ulceration, or degeneration; then wide and deep incision is imperative. Few persons are without moles on some part of their bodies, but these moles rarely undergo malignant degeneration. The type that is irregular in outline, waxy, smooth, frequently with very little elevation, and of a dark, purplish or bluish color, should always be regarded with suspicion, especially if exposed to chafing or irritation.

L. G. DWAN.

**Mayo: Grafting and Traumatic Dissemination of Carcinoma in the Course of Operations for Malignant Disease.** *J. Am. M. Ass.*, 1913, lx, 512.

By Surg., Gynec. & Obst.

Autogenous grafting of carcinoma may occur spontaneously, especially at points of contact, as about the labia, vulva, and in the gastro-intestinal tract. In the large intestine, at least, grafting may occur—not only at points where the mucosa of the opposite wall of the intestine comes in contact with the carcinoma, but it has been known to occur by the process of "seeding," in which malignant cells from the tumor have become detached and grafted on the surface of the mucous membrane, sometimes at a considerable distance from and usually below the original growth. Autogenous peritoneal grafting in carcinoma of the stomach

occurs frequently, and is especially common in Douglas' pouch. The ovaries are particularly susceptible to such grafting, the involved organs rapidly becoming cystic and obscuring the original focus of the disease. Traumatic dissemination of malignant disease is not uncommon. Embolic vascular dissemination through traumatism is common, especially in cancer of the rectum. The infected thrombi in the derivatives of the portal vein are loosened and carried to the liver. The author has observed several cases of cancer of the breast which would have been favorable for a curative operation, reduced to a hopeless condition by the manipulations of ignorant persons in an attempt to rub away the tumor. In cancer of the stomach and intestine, excision of the diseased part should be followed by application of the actual cautery to the cut surface to prevent grafting of cancer cells on the raw surface. A report is given of cases of such grafting in the abdominal wall, on colostomy wounds, and in other situations. The possibility of dissemination of carcinomatous growth during operative procedures should be carefully considered, and a specialized technique inaugurated in which carcinomatous processes would be treated as though they were the focus of virulent infection. The first and most important principle in operations for malignant growths is wide local extirpation. The second principle is the removal of the tributary lymphatics, if possible by block dissection; and third, to avoid grafting or traumatic dissemination of malignant cells during operation, and by proper prophylaxis prevent the possibility of grafting following operation.

**Castle: Recent Case of Lipectomy.** *Calif. St. J. M.*, 1913, xi, 58.

By Surg., Gynec. & Obst.

The author reports a case in which the large pendulous abdominal adiposity was removed by Kelly's method and the umbilical hernia taken care of after the method of Mayo. The specimen removed was one yard and three inches long, one foot and a half wide, and three inches thick at the edge, and weighed 17 pounds. In closing the wound, the tension sutures were passed through a small rubber tube about two inches in length and tied. The incision was not drained, but the serum was let out from time to time with a grooved director. The patient was kept on a restricted diet. When she left the hospital at the end of five weeks she weighed 190 pounds, which was 75 pounds less than her weight on entrance. The author believes this operation is less common than it should be.

C. H. DAVIS.

**Much: Hodgkins Disease and Its Relationship to Tuberculosis.** (Über die Hodgkinsche Krankheit und ihre Beziehung zur Tuberkulose). *Beitr. klin. d. Tuberkl. Suppl.*, 1913, iv, 195.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author points out that certain similarity between this disease and tuberculosis can exist, but



that the microscopic picture of the lymphatic tissue, its infiltration by cell forms of great variety, and the microscopically visible fatty inclusions in the lymph glands and spleen permit of a positive diagnosis. He says that even Sternberg has changed his original opinion of the etiological identity of Hodgkins disease and tuberculosis in that he believes that there is only a certain relationship of both processes.

The results of the examinations of Frankel and Much, who found 14 cases out of 15 to be free from tuberculosis, and those of other authors, speak positively against the origin of Hodgkins disease through the tubercule bacillus. But all are agreed that the process is an infectious one. Much tried to bring out the cause of Hodgkins disease by using the staining method for the granular forms of the tubercule bacillus after digesting the material with antiformin. Together with Frankel, he succeeded in showing forms in most all cases which morphologically could not be differentiated from the granular forms of the tubercule bacillus virus. These forms are found only in small numbers and are difficult to recognize. Isolated fibrous tubercles could be produced in the omentum of experimental animals with freshly extirpated glands, but not with material from autopsies. The process, however, could not be made to spread and the guinea pigs had to be sensitized by vaccination with a virulent tuberculosis virus. These findings indicate that it is not the tubercule bacillus which is the cause of this condition, because one would have to take for granted that only dead tubercule bacilli were always present, and these always of the granular forms. But they do show that there must be some relationship of the causative agent with the tubercule bacillus. These findings of Frankel and Much were corroborated by others. This relationship is emphasized by a case of Hagler who obtained a marked local reaction in the affected glands in a case of Hodgkins disease with tuberculin vaccination.

HAGEMANN.

#### SERA, VACCINES, AND FERMENTS

**Brüggemann: A Contribution to Serum Diagnosis of Malignant Tumors** (Beitrag zur Serum diagnose maligner Tumoren). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1913, xxv, 877.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

With considerable material at his disposal, the author tested the usefulness of Kelling's hæmolytic reactions and of Ascoli's meiostagmin reaction on carcinoma. Kelling's reactions were positive in 68 per cent of gastro-intestinal tumors and in 29 per cent of other malignant tumors. Benign tumors always gave a negative reaction. Seven per cent of other affections of the stomach and intestines, and 14.5 per cent of other affections reacted positively. Pregnant subjects reacted positively in 87.5 per cent of the cases. The reactions, therefore, are not specific and in general are not useful for diagnosis.

The author explains the special frequency of positive reactions in gastro-intestinal tumors by

the fact that most of these tumors are disintegrated, in which case a positive reaction resulted very frequently if the tumor is located in other regions. If the reaction is decidedly positive in an abdominal tumor, it may possibly have diagnostic value as an indication that it is situated in the gastrointestinal tract.

Ascoli's meiostagmin reaction loses in value because of the difficulty of its technique, which consists chiefly in obtaining usable extracts. To a difference of two drops, 21 out of 40 malignant tumors reacted positively; of other affections only one case, that of tuberculosis of the foot, gave a positive reaction. To a difference of 1½ drops, 70 per cent of malignant tumors reacted positively, but 13 per cent of patients who had no tumors also gave a positive reaction. That the reaction has a certain clinical value is not to be denied. Of 18 patients with malignant tumors, not one gave a positive Wassermann reaction—which is in contradiction of Caan's assertions.

KURT MEYER.

**Miller: The Advantages of the Noguchi Technique in the Diagnosis of Syphilis.** *Interst. M. J.*, 1913, xx, 145.

By Surg., Gynec. & Obst.

The preparation of amboceptor in the Noguchi technique has been a source of real difficulty in many laboratories, but may, in the author's experience, be overcome by following a few simple precautions. The procedure is given as follows:

The rabbits selected are of good size and health, and are kept under good hygienic methods, no water being given at any time. The blood is drawn from a superficial vein of any individual, using a fairly large hypodermic needle attached to a rubber tube about 8 inches long, extending into a sterile flask of suitable size in which are small pieces of sterile gauze wire. The needle should be plunged into the vein at an angle of not less than 45 degrees. The blood is defibrinated by vigorously shaking the flask, and all the serum removed by repeated washings in sterile 9 per cent salt solution. The rabbits receive 5 or 6 injections intraperitoneally, the corpuscles being slightly warmed and slowly injected. The author has found it advisable to divide the last injection into two parts, to be given on successive days. The resistance of the rabbits must govern the interval of all of the injections. The animal is bled when a sufficiently high titre is reached and filter paper is impregnated with the serum; amboceptor is thus preserved for months at room temperature. The complement is obtained by drawing the blood from the guinea pig's heart, thus preserving the pig for future use.

Two points of great accuracy are claimed in the Noguchi technique, namely (a) the elimination of the source of error due to the natural antisheep amboceptor which the human serum contains; and (b) the use of a serum not weakened by inactivation.

The amount of complement in the active serum is not to be considered as an objection, being present in such a small quantity of serum as to be negligible.



In the Noguchi technique one is working with absolutely known quantities, whose units have been standardized and fixed. The technique is not only accurate, but it is simple; and because of its accuracy and simplicity it is especially commended to the modestly equipped laboratory. M. G. SEELIG.

**Vaughan: The Relation of Anaphylaxis to Immunity and Disease.** *Am. J. M. Sci.*, 1913, cxlv, 161. By Surg., Gynec. & Obst.

The only way in which cells of any kind — bacterial, protozoal, or animal — can grow and multiply is by elaborating ferments which split up the pabulum within their reach, thus preparing a food supply. This is the fundamental factor of the general immunity possessed by animals against the lower forms of life. There is no constant fixed relation between the toxicogenic and pathogenic properties of bacilli. The bacillus prodigiosus contains enough intracellular poison to kill guinea pigs when injected intraperitoneally in doses of 1 to 90,000 body weight, while the anthrax bacillus requires 1 to 1,700; and still the former is non-pathogenic and the latter is highly pathogenic. The explanation lies in the fact that the prodigiosus cannot grow and multiply in the animal body, because its secretions do not digest the proteins of the animal body, or, what is more probable, the secretions of the body cells destroy the bacillus. On the other hand, the anthrax bacillus elaborates ferments which do digest the proteins of the animal body, while the body cells do not destroy the bacillus. For similar reasons, a given bacillus may be pathogenic to one species or to one race and wholly devoid of effect on other animals.

The great lesson which we have learned from our studies of anaphylaxis is that the digestive secretions of body cells may be developed and modified by the kind of protein brought into contact with them. When a foreign protein is introduced into the animal body certain cells develop a specific digestive ferment which splits up that protein and no other.

The second fundamental fact in protein sensitization is that every protein molecule contains a poisonous group. This is true of all bacterial, vegetable and animal proteins, so far as they have been investigated. The poisonous group in the protein molecule is the same so far as its physiological action is concerned, whatever be the nature of the entire molecule of which it is a part. The poisonous group found in every protein molecule probably contains the benzol ring with nitrogenous side chains. Attached to this primary group are secondary groups, which may be designated as "characteristic" groups, because it is in these that one protein differs from another. The sensitizing properties of proteins reside in the secondary groups. It is for this reason that the special ferments elaborated in the cells of the animal under the influence of a foreign protein are specific. The poisonous group, when detached from its secondary or characteristic groups, does not sensitize

either to itself or to the whole protein from which it came. The protein molecule may be compared to the basic or neutral salt which becomes more or less poisonous as its basic elements are removed, and when the free acid only is left its maximum toxic action is reached. The protein poison in the purest form in which it has been obtained, and this is probably far from chemical purity, kills guinea pigs of from 200 to 300 gr. weight when injected intracardially in doses of 0.5 mg. Biedl and Kraus have shown that the action of the anaphylactic poison and that of peptone are identical. This is necessarily true, because the active group is the same. The protein poison is partially set free or activated by the alimentary proteolytic enzymes, and if it were a readily diffusible substance all proteins would be poisonous to man when taken by the mouth. But since it does not speedily pass through the alimentary walls, and since additional cleavage renders it inert, we escape its poisonous action.

The prevention of anaphylactic shock is of the greatest importance to the physician. Although the procedure necessary to protect the patient against anaphylactic shock was first pointed out by Vaughan, Jr., the best work along this line has been done by Besredka. The last mentioned investigator has shown that the intraperitoneal injection of from  $\frac{1}{10}$  to  $\frac{1}{5}$  cc. of the serum in sensitized guinea pigs renders them so positively refractory that five hours later intracerebral injections are wholly without effect. The recommendation of Vaughan is that in all cases in which anaphylactic shock may be feared a preliminary injection of from 0.1 to 0.2 cc. should be made, and after an interval of two hours the full dose may be given. The suggestion has been made by Rosenau and Anderson that all individuals who have shown any tendency to asthma, together with those who have received previous injections of the serum, with an interval of twelve days or longer, should be included among those in whom anaphylactic shock may be feared. It is not held that, even with these precautions, all the symptoms of serum disease will in all cases be averted, but serious anaphylactic shock is not likely to occur. There are instances in which the first injection of horse serum has induced alarming, and rarely, even fatal, anaphylactic shock. These have been reported with sufficient frequency to cause more or less anxiety in the employment of therapeutic sera. Besides, it raises the very important question as to why a small percentage of person should be apparently susceptible to an agent to which the great majority are immune. Cases of "horse asthma," in which more or less violent symptoms, such as sneezing, inflammation of the conjunctiva and mucous membrane of the upper air passages, result from riding behind horses, are well known. The flying hairs from horses, carrying minute quantities of protein, are inhaled and may cause local sensitization, and it may be that this accounts for instances of anaphylactic shock observed after first.



injections of horse serum. The recent brilliant work of Rosenau, in which he has shown that the expired air contains a protein sensitizer, offers a rational explanation for sensitization to horse serum.

The valuable research of von Pirquet on vaccinia has done much to elucidate the problems of sensitization. By daily vaccinations this investigator has shown that the process is accelerated until finally it passes through every phase in a few hours. This explains not only the development of vaccinia and the way in which it protects against smallpox, but also vaccination in other infectious diseases. The avirulent organism of vaccinia still has the protein constitution of the virulent one of smallpox. It has been modified in function but not seriously altered in essence by its passage through the cow. The proteins constituting its molecules have not been changed, or have been so slightly altered that one form still sensitizes to the other. The modified virus sensitizes the body cells, and by this we mean that it causes the cell to elaborate a specific enzyme that digests and destroys the virus. The body cells retain this new function and when the smallpox virus finds its way into the body it is digested and destroyed before it has time to multiply sufficiently to cause disease. This is the basis of all bacterial and protozoal vaccination.

That the tuberculous animal behaves differently from the non-tuberculosis on receiving injections of the tuberculin protein, whether it be in the form of the living bacillus, in dead cells, or in solution, has been abundantly demonstrated. In 1897 Trudeau observed that when healthy rabbits receive injections of virulent cultures in the eye there is little to be seen for about 14 days, when with increasing vascularity tubercles form in the iris, after which inflammation extends and the eye is practically destroyed within six to eight weeks. Like treatment of tuberculous rabbits develops an iritis within from two to five days, but at the end of the second or third week, at a time when the controls begin to develop destructive changes, the inflammation begins to subside. Later studies have confirmed and amplified these, and it has been found that death may be induced within 24 hours by injecting a large amount of the living culture into the tuberculous animal.

We are in great need of a vaccine for tuberculosis, and it has been abundantly demonstrated that neither the living nor the dead bacillus can be used for this purpose. It remains to be determined whether or not we can obtain from the tubercle cellular substance a non-poisonous poison. It seems to be quite evident that the white man, after centuries, is becoming more or less immune to tuberculosis. If we had some agent by which this immunity could be intensified, it would be a great aid in our warfare against tuberculosis.

The relation of anaphylaxis to fever has been abundantly demonstrated. Work in the author's laboratory has established the following points:

1. Large doses of unbroken protein, administered intra-abdominally, subcutaneously, or intravenously, have no effect upon the temperature; at least they do not cause fever.

2. Small doses, especially when repeated, cause fever, the forms of which may be varied at will by changing the size and the interval of dosage.

3. The effect of protein injections on the temperature is more prompt and marked in sensitized than in fresh animals.

4. The intravenous injection of laked blood corpuscles from either man or the rabbit causes in the latter, even in very small quantity or in single or repeated doses, prompt and marked elevation of temperature.

5. Laked corpuscles, after removal of the stroma by filtration, have a like effect.

6. Protein fever can be continued for weeks by repeated injections, giving a curve which cannot be distinguished from that of typhoid fever.

7. Protein fever is accompanied by increased nitrogen elimination and gradual wasting.

8. Protein fever covers practically all cases of clinical fever.

9. Animals killed by experimentally induced fever may die at the height of the fever, but as a rule the temperature rapidly falls before death.

10. Fever induced by repeated injections of bacterial proteins and ending in recovery is followed by immunity.

11. The serum of animals in which protein fever has been induced digests the homologous protein in vitro.

12. Fever results from the parenteral digestion of proteins.

13. There are two kinds of parenteral proteolytic enzymes, one specific and the other non-specific.

14. The production of the non-specific ferment is easily and quickly stimulated.

15. The development of the specific ferment requires a longer time.

16. Sensitization and immunity are different manifestations of the same process.

17. Foreign proteins, living or dead, when introduced into the blood soon diffuse through the tissues and sensitize the cells.

18. The subnormal temperature which may occur in the course of fever or at its termination is due to the rapid liberation of the protein poison.

19. Fever per se must be regarded as a beneficent phenomenon.

20. The evident sources of excessive heat production in fever are the following: (a) That arising from the unusual activity of the cells multiplying the enzyme; (b) that arising from the cleavage of the foreign protein; (c) that arising from the destructive reaction between the split products, from the foreign proteins and the proteins of the body.

The relation of sensitization to hay fever, common cold, and food and drug idiosyncrasies is discussed.



The author, in concluding, makes the following statement: It seems to be a physiological law that the specific ferments elaborated by living cells are determined by the proteins brought into contact with them. I wish to formulate what I believe to be two biological laws: 1. When the body cells find themselves in contact with or permeated by foreign proteins, they tend to elaborate specific ferments which digest and destroy the foreign proteins. 2. When body cells are attacked by destructive ferments they tend to elaborate anti-ferments the function of which is to neutralize the ferments and thus protect the cells.

### BLOOD

**Lintz: Blood Cultures; Simplified by New Apparatus; Demonstration.** *Long Island M. J.*, 1913, vii, 60. By Surg., Gynec. & Obst.

Place in bottle 0.5 gm. of finely powdered sodium chloride or 10 cc. of 1 per cent solution of ammonium oxalate in normal saline. Replace stopper so that there is direct communication between the inside of the bottle and the outside air. *Next produce a partial vacuum* in the flask by means of a water pump, vacuum pump, or by simple aspiration of the air with an ordinary syringe or by mouth, or else by placing the flask in water with neck above the level and boiling the water. Then break the communication by turning stopper sidewise. Attach needle to stopper and cover with test-tube, and sterilize entire apparatus, which is then ready for future or immediate use.

To use apparatus, paint bend of elbow with tincture of iodine (or sterilize by any method), plunge needle into median basilic or median cephalic vein, and then rotate stopper so that lower opening of F communicates with groove C. The vacuum will rapidly suck in the blood from vein. Having obtained the desired quantity of blood, ordinarily about 10 cc., break communication by rotating the stopper sidewise, and then remove needle from vein. Cover opening in skin with collodion.

Now shake the bottle. The sodium chloride or the ammonium oxalate used prevents coagulation, but is not bactericidal. The blood thus obtained can be taken to the laboratory and be subjected to the usual process.

If a certain type of micro-organism is suspected to be present, instead of the oxalate or the chloride one may use a culture medium in the bottle best suited for growth of that particular type of bacteria, cultivate it in the latter and thus dispense with any further manipulation of the blood.

The advantages of this method are:

1. Contaminations are excluded, since the blood does not come in contact with the air, the flask acting both as syringe and as container of the nutrient media.

2. The general practitioner of the city or country can avail himself of this method, for he can procure the blood, and then send the flask to any laboratory

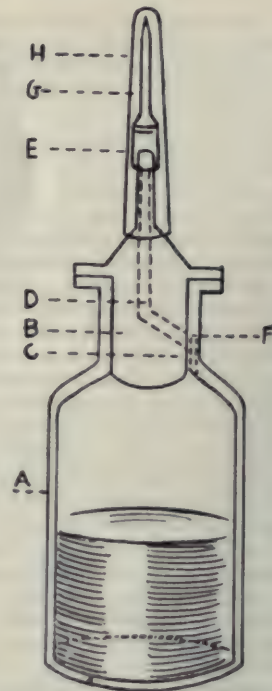


Fig. 1. (Lintz.) Apparatus for obtaining blood cultures: (A) glass bottle; (B) air-tight stopper; (C) groove in neck of flask; (D) canal in stopper; (E) upper opening of canal; (F) lower opening; (G) needle; (H) test tube. In this view of the apparatus the canal (D) is in communication with the groove (C). By turning the stopper this communication is broken.

for further examination. Then all that has to be determined is the micro-organism present, so that the expense to the patient is but trivial.

3. The paraphernalia of the old method frightens the patient; this method causes anticipation of no more pain than would be caused by a hypodermic needle.

4. One has a sterile apparatus ready at once as the occasion arises.

5. Apparatus can be carried in the vest pocket, making blood-getting convenient outside the laboratory.

6. Its simplicity — anyone can obtain the blood. 7. Clear serum is obtained without hemolysis. Apparatus can be used for any serologic purpose.

8. The apparatus saves outlay for expensive syringes and will last a lifetime.

**Burnham: Post-operative Thrombophlebitis.** *Ann. Surg.*, Phila., 1913, lvii, 151.

By Surg., Gynec. & Obst.

According to the modern theory, thrombosis depends on chemical or physical changes in the character of the blood, together with disease or injury to the vessel wall, and possibly on changes in



the rate of the venous flow. Changes in the vessel walls may be the cause of thrombus formation, but many cases occur in young adults in whom vessel changes are improbable.

Many of the clinical findings of thrombosis are suggestive of infection. The fever, the blood count, and the local changes are all those of a mild grade of infection. The author reports 98 cases of post-operative thrombophlebitis in a total of 11,655 operations. The condition occurred most frequently following hysterectomy, the radical cure of ventral hernia, appendectomy, and operations on the uterine appendages. Phlebitis occurred in over 5 per cent of all operations for uterine fibroids.

Suppurative infection of the wound seemed to have no influence on the occurrence or severity of the phlebitis. Purulent cases are not necessarily accompanied by the severer types of phlebitis. Cases in which there was drainage of the original wound were generally milder and ran a shorter course. In drainage cases, the danger of phlebitis persists for a longer time than in clean cases. In operations followed by primary union the danger of phlebitis is apparently over by the twenty-first day. In the drainage cases the danger seems to persist for a much longer period.

The absorption of cellular material and exudate from the wound — possibly the absorption of bacteria as well — seems to be intimately connected with the occurrence of phlebitis.

There were 4 deaths in the series, but no case of suppurative of the affected vein. Embolism occurred in 10 cases, and pleurisy in 4.

Excepting rest in bed, we have in our possession no definite means of influencing the course of phlebitis. Ichthyol seemed to have a constant influence toward relief of the local pain.

**Cooley and Vaughan: A Simple Method of Blood Transfusion.** *J. Am. M. Ass.*, 1913, lx, 435.  
By Surg., Gynec. & Obst.

Cooley and Vaughan report a simple technique of blood transfusion successfully employed in a baby three days after birth. Transfusion by Crile's method was abandoned, the vein of the donor refusing to bleed. Blood from the donor's basilic vein was drawn into a 10 cc. glass syringe containing 1 cc. physiologic salt solution, and, the syringe nearly filled with blood, 0.5 cc. more of saline was drawn in. The sharp needle was then changed for a blunt one and the blood then injected into the child's vein, which was exposed and opened. Further injection proved unnecessary. Two minutes would more than cover the period between the insertion of the needle into the donor's vein and the completion of the injection of 10 cc. into the child. The technique is so simple that it can be undertaken by anyone and may be applied in repeated small injections if followed up with a small amount of normal salt so that no clot will form in the lumen of the vein.

L. G. DWAN.

## BLOOD AND LYMPH VESSELS

**Pignatti: The Process of Healing of Wounds of Arteries and the Experimental Production of Traumatic Aneurisms** (Nouvelles recherches sur le processus de guérison des plaies des artères et sur la production expérimentale des anévrismes traumatiques). *Polclin., Roma.*, 1913, xx, 24.

By Journal de Chirurgie.

In this period, when the subject of vessel suture (especially that of arteries) and the transplantation of organs is holding such a prominent position and is being followed with so much success, it is particularly interesting to review certain questions relative to arterial cicatrization and the effect which this has upon the blood vessels and blood pressure. It is furthermore important to understand the exact histologic changes which occur during the process of healing of arteries. After having reviewed the works and the opinions of various authors and experimenters on this question, the author sums up the different views, as formulated up to the present time, concerning the repair of arterial wounds treated by suture in the following way:

1. Complete repair of integrity of the vascular wall.
2. Partial reconstruction with new elastic and muscular fiber formation.
3. The formation of continuous scar, complete, or only of the muscular fiber.
4. Formation of a simple scar.

As a result of these various opinions, the author has performed a number of experimental researches in the hope of elucidating as nearly as possible the question of the histology of arterial scar formation.

In order to reduce the experiment to its utmost simplicity, he has used only longitudinal wounds of the arteries, which allow good results to be obtained most easily, and, an indispensable point, prevents the obliteration of the vessel. Further, in order to determine what possible influence on the process of repair non-penetrating wounds might have, the author performed a second series of control experiments of nonpenetrating longitudinal wounds of the arteries, which has enabled him to take up also the question of the pathology of traumatic aneurisms.

The author reports his researches in detail, together with the technique employed on twelve cases of penetrating longitudinal wounds, and twelve of non-penetrating wounds.

If arterial scars are examined after a considerable length of time (17 months) they will appear for the most part, to be made up of connective tissues. The regeneration of the normal components of the vascular wall (the elastic and muscular fibres) is in all cases very limited. In no instance was complete restoration of the vascular wall noted, due to the absence of development of the elastic and muscular components. In the arterial scars thus formed, one could make out the presence of a rich reticulum composed of "gitterfasern" or precollagen fibres which appeared like embryonic connective tissue in evolution. This reticulum is always very differ-



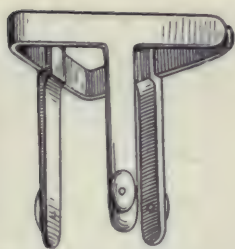


Fig. 1. (Da Cunha.)

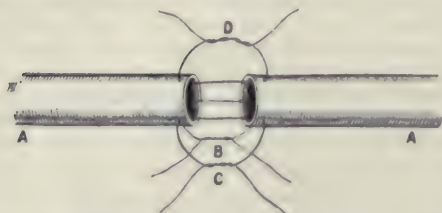


Fig. 2. (Da Cunha.)

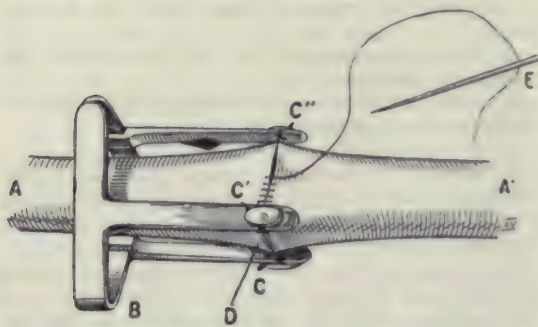


Fig. 3. (Da Cunha.)

ent from that which is found during the course of muscular evolution. The experimental production of traumatic aneurisms is possible, though difficult, and one can produce either true or false aneurisms. This histologic formation, especially the presence of precollagen fibres, explains the resistance which the connective tissue in penetrating or non-penetrating wounds of the arteries generally presents to blood pressure.

A. BASSET.

**Leitao da Cunha: Apparatus for Suturing Arteries and Veins** (Appareil pour sutures artérielles et veineuses). *La Presse Med.*, 1913, xxi, 112.

By Journal de Chirurgie.

When arterial suturing is done by the Carrell method, the great difficulty lies in separating the arterial walls and in arranging the buttonhole for the arteries into a true triangle. Leitao da Cunha advises the following technique to remedy the above difficulties: His apparatus consists of a pliable steel triangle 2 cm. in length and 5 mm. in width. At the middle of each side of the triangle there is a metal arm 2 cm. in length, at the end of which is a

small hook. The triangle can be opened at one side to permit its removal after the operation. The arterial wall is attached to the hooks of the instrument at three equally distant points. By this method the round arterial opening is made triangular and the continuous suture may be introduced according to the technique of Carrell, after which the instrument is removed by opening the triangle.

In a lateral anastomosis, the two corresponding points on each vessel are placed upon two of the hooks only. The upper side is stitched first and then after turning the instrument over the suture is continued on the opposite side.

J. DUMONT.

**Perimow: Anastomosis Between Vein Saphena Magna and Artery Tibialis Posterior** (Ein Versuch der Einnähung der Vena saphena magna in die Art. tibialis post.). *Russk. Vrach.*, 1913, xii, 127.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author is of the opinion that Wieting's method of anastomosing the vein and artery often fails. He thinks that arterial pressure is often insufficient to overcome the valves of the veins which thus hold back the blood and prevent it from reaching the end branches and capillaries. He advises anastomosis of arteries with superficial veins because they usually have no valves. He reports a case of gangrene of the toes following ergot poisoning where he performed an anastomosis between the vein saphena magna and artery tibialis posterior. The author states that he had studied the long saphenous vein in cadavers and has found that they were not supplied with valves.

JOFFE.

**Bernheim: Arteriovenous Anastomosis; Successful Reversal of the Circulation in All Four Extremities of the Same Individual.** *J. Am. M. Ass.*, 1913, lx, 360.

By Surg., Gynec. & Obst.

This article is a reply by Bernheim to a recent article by Coenen of Breslau, in which it was asserted that reversal of the circulation in the limb of a human is impossible because of the obstruction offered to the arterial flow by the vein valves. Coenen claimed that his animal experiments showed conclusively that the arterial pressure is unable to overcome this obstruction, and that injection experiments on the cadaver gave similar results. Bernheim reports a case in which he successfully reversed the circulation in all four extremities, and claims that this, as well as other cases done by him, effectively refutes all of Coenen's experimental data. The case in brief is that of a young woman, now 26 years of age, who, suffering from Raynaud's disease, had actual (toes and fingers) and threatened gangrene of all four extremities. Reversal was done in the left leg in February, 1911, Carrel's end-to-end suture being employed; in the right leg in May, 1911; in the left arm in January, 1912; and in the right arm in March, 1912, the last three operations being the lateral anastomosis devised by Bernheim and Stone in 1911. Gangrene was stopped in each instance, and the patient's pain was



totally relieved in both arms and one leg. In the right leg the pain was only partially relieved, due to complications other than the arterial suture. That the blood not only went over to the vein but also down the vein in each instance was evidenced by a palpable thrill at and below the site of anastomosis (a bruit that is audible down to the popliteal spaces of the legs and almost to the wrists in the arms) and pulsation in the veins, that is not only felt in all extremities but even seen in the veins of the arms well down below the elbows, the superficial tissues being rather scant. The patient is up and about and able to attend to her duties. No similar case is on record.

### POISONS

**Conradi: Friedlaender Sepsis with Severe Hæmorrhage in the Adrenals in a Case of Hereditary Syphilis** (Friedlaender-Sepsis mit schweren Nebennierenblutungen in einem Falle von Lues hereditaria). *Jahrb. f. Kinderh.*, 1913, lxxvii, 190.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A premature infant of eight months suffered from suppuration of the umbilicus, a purulent secretion from the nose, and several mucous patches on the hard palate. The skin could be peeled off from the palm of hand and sole of the foot. Papules were abundant. In the adrenals a large dark red hæmorrhage was found on section. Gram-negative bacilli developed from the spleen and heart blood in bouillon culture. Spirocheta were demonstrated in the liver and spleen. According to the author, the child suffered from hereditary syphilis and sepsis from Friedlaender's encapsulated bacilli originating from the infected umbilicus. The hæmorrhage in the adrenals was the result of the sepsis and the direct cause of death. REBER.

**Lindemann: A Description of a New Method for Culture of Anaerobes Suitable for Practical Purposes** (Vereinfachung der Anaerobenzüchtung nebst Angabe eines praktisch verwertbaren neuen Kulturverfahrens). *München. med. Wchnschr.*, 1913, lx, 236.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The ordinary method of growing anaerobes from the blood consists in filling a number of Petri dishes and placing them in a tightly closed preserving jar, the bottom of which has been filled with pyrogallol. The Petri dishes, in the lower portion of the jar, have an indenture on either side, so that when the cover is put on there still remains a hole by means of which the contents communicate with the outside.

Even for obligate anaerobes this simple method is quite practicable. It has only one disadvantage, the difficulty of observing the growth of the culture. In order to make this possible, the author has devised a new simple apparatus consisting of two test tubes telescoped into each other. The space between them is filled with the blood agar; the anaerobes go to the bottom. As the layer of glass is thin, their development can be noted. STRÖBEL.

**Severin: Pneumococcus Septicemia and Pneumococcus Meningitis Following Purulent Cholecystitis and Cholangitis** (Über Pneumokokkensepsis im Anschluss an calculöse purulente cholecystitis und abscedierende Cholangitis). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1913, xxv, 797.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author relates two important cases in female patients who had suffered from typical gall-stone colics for years. Pneumococci could be demonstrated in the blood and spinal fluid in both cases before death. Aspiration of the gall-bladder after death showed that the pneumococci were also present in the pus of the gall-bladder. The author emphasizes the fact that a general infection from the pneumococcus following infectious diseases of the gall-bladder rarely occurs because of the bacteriolytic action of the bile salts upon the pneumococci. An infection of the gall-bladder rarely occurs from the above organism. MENDELSON.

**Barclay: The Diagnosis of Gastric and Oesophageal Affections by X-ray Methods.** *Med. Chronicle*, 1913, lvii, 249.  
By Surg., Gynec. & Obst.

The author finishes the thesis on these subjects begun in the last issue, the present installment occupying fifty pages. Topic by topic, the underlying basis of bismuth X-ray methods is explained and applied to several deforming and non-deforming diseases of the stomach and duodenum. Spasmodic conditions with or without organic disease of the stomach or duodenum must be differentiated from fixed deformities by massage, belladonna and re-examination. The causes of pyloric obstruction frequently cannot be determined. Carcinoma depends greatly upon its irregular encroachment upon the stomach area for its detection. The author believes with Hertz that tension is the only cause of true visceral pain.

The symptom-complex of duodenal irritation is recognized: (1) Normal stomach, more or less hypertonic; (2) active peristalsis; (3) rapid emptying of stomach; (4) food seen passing through duodenum, with perhaps a persistent shadow in some portion. This symptom-complex, however, is not pathognomonic of duodenal ulcer, since it is so frequently seen in adhesions of gall-bladder origin, regional carcinoma, old appendix disease and a multiplicity of conditions.

The concluding pages give a tabulation of several hundred cases according to the operation or post-mortem findings. The X-ray findings alone are frequently insufficient as a basis for diagnosis, but repeated X-ray studies in the light of history and clinical findings greatly enhance the value of either method alone. The beginner in this work is wrong as often as he is right. HOLLIS E. POTTER.

**Spéder: Dental Radiography and Its Various Technique** (La radiographie dentaire et ses diverses techniques). *Arch. d'Elect. med. exp. e. clin.*, 1912, xx, 569.  
By Journal de Chirurgie.

A good radiographic technique should furnish numerous views in which the dimensions and con-



nections should approach as closely as possible the actual conditions.

To obtain such radiographs of the teeth it is necessary to employ methods varying with the region to be examined, the nature of the problem and the conformation of the individual. The principle methods in use are the intrabuccal and extrabuccal.

1. *Intrabuccal radiography.* (a) To J. Belot France owes the development of dental radiography, its elaboration and popularization. He has shown that if the plate is placed horizontally between the dental arches, it is sufficient if the tube is placed on the prolongation of a line passing through the apex of the tooth to be examined, and striking the plate at an angle of incidence of  $45^\circ$  in order to get a natural sized image. A plate holder prepared according to these specifications facilitates the application of this method. (b) Often for the incisors, canines, and first molars it is necessary only to apply a plate to their posterior surface with the rays normal to their surface. (c) When one desires to obtain simultaneously pictures of the dental arch together with the conditions and connections of the teeth and the sinuses, the method described in figures 4 and 5 of the original article is useful.

2. *Extrabuccal radiography.* Here the regular technique for radiography is followed, the plate being placed next to the skin, the patient lying in the lateral position with the head turned to one side and forcibly extended. It should be remembered that a frontal view is sometimes useful in obtaining pictures of the maxillary sinuses and their connections with the teeth of the upper jaw. Thus, with the aid of relatively slight variations in technique, it is possible to obtain excellent information regarding any part of the oral system.

R. LEDOUX-LEBEARD.

**Jones: The Use of Condenser Discharges in Electrical Testing.** *Proc. Roy. Soc. M.*, 1913, vi, 49.  
By Surg., Gynec. & Obst.

A simplified method of testing muscle and nerve excitability has been used for sufficient time to prove its superiority over currents supplied by battery and induction coils in the following respects: (1) it is more rapid; (2) it is more precise; (3) it gives more information; (4) it is far less painful to the patient.

The testing is done by discharging a condenser or series of condensers of known capacity which have been charged with a known voltage from any convenient current supply. A simple device for cutting in more capacity, for charging and discharging, is described.

In practical application one may use a dozen or more settings of the condenser to find the minimum

charge which will produce contraction. This gives graduated readings which express much finer differences in the degree of muscle-nerve excitability. When other factors are known the condenser capacities in micro-farads can be easily reduced to terms of discharge duration if so desired.

Since condensers of the low capacities required for this work are not stocked commercially, suggestions are given as to their building and standardization together with the range of condenser sizes which the author has found necessary to elicit minimum responses in all muscles from those nearly normal to those having marked reaction of degeneration.

HOLLIS E. POTTER.

**Cotton: The Episcopo, an Optical Instrument for X-ray.** *Arch. Rönt. Ray*, 1913, xvii, 355.

By Surg., Gynec. & Obst.

This instrument, as described by the author, enables one to view an object simultaneously with an X-ray picture of that object in such a way that its internal mechanism can be projected mentally upon its surface. This is accomplished by using a transparent plane reflector at a  $45^\circ$  angle in conjunction with the object and image placed in planes at right angles to each other and at a distance corresponding to that in which they were when the X-ray image was produced. The eye occupies the position the anode of the tube had during the exposure. The instrument can be adapted also for combined photography of an object and its X-ray picture. With its aid, X-ray outlines of the internal organs can be brought into direct relation with surface markings.

ADOLPH HARTUNG.

**Barratt: The Action of Scharloch R upon X-rayed Skin.** *Lancet*, Lond., 1913, cxxxiv, 454.

By Surg., Gynec. & Obst.

In order to observe the effect of Scharloch R upon the epithelial structures of skin which is chronically very indolent, experiments were made upon the skin of rabbit's ears which had received moderate or severe exposure to X-rays at some time previous. Scharloch R in olive oil showed the same tendency as previously reported for normal skin, i. e. a selective proliferation of the epithelial elements. The degree to which this proliferation could be carried was extreme in skin not severely degenerated by X-ray and much less in skin greatly scarred and atrophied.

Such skin showed a tendency to slough after the injection in direct proportion to its degree of degeneration. Several drawings from microscopic sections serve well to illustrate the epithelial changes described.

HOLLIS E. POTTER.



## GYNECOLOGY

### UTERUS

**Keyes: Carcinoma of the Uterus in the Non-Pregnant and Pregnant.** *Illinois M. J.*, 1913, xiii, 169. By Surg., Gynec. & Obst.

In his opening statement, Keyes cites statistics to prove that frequency of cancer in women as compared to cancer in man is as 3 to 1, and that nearly one third, or 28 per cent (Fehling), are of the uterus.

Statistics also show that cancer is most prevalent among women between 30 to 40 years, the percentage being 34; in the sixth decade the percentage is 11. He states that sexual intercourse, fecundity and sequelæ of labor seem to have a marked influence on the disease, and old chronic inflammations leading to endocervical catarrh must play an important part.

Cancer of the uterus is discussed under three heads: 1. Carcinoma portio vaginalis uteri, occurring most often in the 42d year, appears as a papillary growth or burrows down as a carcinoma ulcer. This first type usually grows down along the vaginal mucosa and not up into the cervix. 2. Carcinoma endocervicis uteri occurs usually about the age of 47 years and extends upward into the fundus of the uterus rather than out upon the vaginal cervix. 3. Carcinoma corpus uteri occurs most often at about the age of 54 years and makes up only from between 3 to 13 per cent of all cases. It is also found more often in nulliparæ.

Subjective symptoms are: (1) Hæmorrhage from any trauma, spontaneous, or menorrhagia in a woman between 35 and 40 years is suspicious; (2) odor is usually a late symptom and speaks for extensive necrosis; (3) pain is also usually a later symptom and may arise from a variety of causes; (4) metastases; (5) cachexia.

Under diagnosis, Keyes advises early curettage in all suspicious cases, with microscopic examination of the scrapings.

Carcinoma in pregnancy and labor: (1) Carcinoma of the fundus in pregnancy is rare; (2) cancer of the cervix is more common and may be either present at time of conception or may commence during pregnancy.

The prognosis for carcinoma complicating pregnancy is much worse because of the increased blood and lymphatic supply. About 30 to 40 per cent of the cases terminate in abortion.

Labor is delayed, and section in a series of cases reported saved all the viable children and all but 6 to 7 per cent of the women, while the expectant treatment resulted in the loss of 50 per cent of the mothers and 70 per cent of the babies.

EUGENE CARY.

**Kriwsky: Radical Operation for Cancer of Uterus** (Zur Frage der Radikaloperation bei Carcinoma uteri). *Russ. Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 55. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This article is a report of 50 cases of extirpation of the uterus, 49 of cervix cancer and one of corpus cancer, in most cases with formation of large crater, involvement of vagina, and immovable uterus. The average duration of symptoms was five months. Before operation curettage, cauterization, and iodine applications had been employed. Ether-chloroform anæsthesia with the Roth-Dräger apparatus was preferred by the author. The longitudinal incision was used 23 times and the Pfannenstiel transverse incision in 27 of the cases. The invaded tissues were removed as extensively as possible. In 41 patients abdominal drainage was necessary with 7 deaths; in 9, closure was without drainage with 2 deaths. Duration of the operations averaged 2 hours. Nine patients died during the first month of septic peritonitis, septicemia, and myocarditis. Eight recurrences were found in first year, and three in the beginning of the second. Of these, four died. In eight cases of longitudinal incision and in 13 of transverse incision healing was primary. The patients remained in the hospital on an average of 37 days.

GINSBURG.

**Broun: The Curability of Cervical Cancer of the Uterus.** *N. Y. M. J.*, 1913, xcvi, 217.

By Surg., Gynec. & Obst.

The author believes that in the majority of cases of operable cervical carcinoma extension occurs by continuity of tissue, and that the only hope of cure is by the removal of the surrounding tissue. The percentage of gland involvement is small. When secondary invasion occurs, it is first seen along the incision of the vaginal vault. On account of the primary mortality and the disagreeable sequelæ, hysterectomy is justifiable in incipient cases.

Schuchardt in 1893 evolved the extended operation, which was further developed in 1895 by Schauta and Wertheim. They divide these cases into three classes: (1) where there is no involvement of the broad ligament; (2) where the base of the broad ligament is involved; (3) where the cancerous process has extended so far that operation is useless.

In the last two classifications, surgical procedure with wide extirpation is justified. The only hope of the unfortunate cancerous patient is in early treatment, and that our efforts should be directed toward the education of the laity through medical societies, midwives, and druggists, and that this education should include pamphlets on early diagnosis, which should be sent to the medical profes-



sion, especially to those who are actively engaged in teaching in our medical schools.

Finally, the author gives a brief illustrated technique of the extended operation of vaginal hysterectomy.

ROBERT T. GILLMORE.

**Ottow: Hematometra Caused by a Corporeal Cancer with Acquired Cervical Atresia** (Hämatometra im 80 Lebensjahre, bedingt durch ein Corpuscarcinom bei erworbener Atresia cervicis). *Zentralbl. f. Gynäk.*, 1913, XXXVII, 275.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ottow mentions a number of cases of hematometra in the post-climacteric period reported by others. While these were caused by closure of the cervix through carcinomas or myomas he concludes that in his case a complete atresia of the cervix existed as a result of a curettage performed a number of years ago. At the same time a corpus cancer developed, ulceration of which caused hæmorrhage; and because of the atresia, a hematometra developed. The atresia suddenly broke and a severe hæmorrhage followed which, however, did not endanger the general health of the patient, as the blood lost had accumulated during a long period of time. Of particular interest is the fact that the senile atrophic uterus of his patient, 79 years old, could still accommodate itself to such an extensive hematometra.

BRETZ.

**Lehmann: Climacteric Hæmorrhages and Prophyllaxis of Cancer** (Klimakterische Blutungen und Carcinomprophylaxe). *Zentralbl. f. Gynäk.*, 1913, XXXVII, 96.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author condemns the term "climacteric hæmorrhages." These hæmorrhages do not depend on the nature of the climacteric period, but each one has a definite etiology according to which it should be named. It should be made clear to the layman that more frequent and more profuse menstrual periods during the change of life are always the result of disease. An exploratory curettage should be made in each suspicious hæmorrhage. REBER.

**Messa: Contribution to the Study of Retrogressive Transformations and Benign Degenerations of Fibromata of the Uterus** (Contribution à l'étude des transformations regressives degenerescences benignes des fibromyomes de l'uterus). *Ann. d. Ostet. e. Ginec.*, 1912, II, 549.

By Journal de Chirurgie.

Messa divides his work into four comprehensive chapters and studies successively:

Fibrous degeneration accompanied by secondary alterations of necrobiosis, œdema and calcification.

Pseudocystic degeneration due for the most part to phenomena of œdema, but also due to liquifaction of the tissues by the process of necrosis.

Necrosis as a retrogressive change in itself.

Infectious processes divided in their turn into supuration and sloughing.

In the first chapter he reports seven observations

of fibromata with fibrous degeneration. This is essentially characterized by the development of connective tissue unevenly distributed which surrounds and progressively hardens the myomatous nucleus. This is accompanied by lesions of the nutritive blood vessels which progressively diminish in number and caliber. The arteries are attacked by endarteritis. The fibrous tissue develops first and in a predominating manner around the blood vessels. The causes of these vascular lesions are probably numerous; but one is constant and of preponderant importance, e.g., the approach and establishment of the menopause.

The progressive reduction of circulation, due to obliterative endarteritis which may even develop into complete occlusion of the blood vessels, explains the possibility in this case of real necrosis. The fibromata which are the most subject to the phenomena of necrobiosis are those which by their volume or position (fibromata of the fundus or subligamentous fibromata) are the most exposed to insufficient nutrition or to compression.

The fibromatous nodules which develop subserous are rarely attacked by necrobiosis. On the contrary the intramural nodes are more frequently and more easily involved than all others.

Edematous degeneration secondary to fibrous degeneration is comparatively rare. Calcareous degeneration on the contrary, although rarely found at operation, is nevertheless quite frequently met with at autopsy. Clinically it often escapes notice, but sometimes when it attacks fibromata of certain size it manifests itself by phenomena of pressure.

Necrobiosis reveals itself principally through two types of symptoms: Metrorrhagia and pain.

The second chapter treats of œdematous and pseudocystic degenerations. After having summed up the divergent opinions and theories of authors upon this question, Messa says that for his part in the great majority of cases the softening of fibromatous tissue and the formation of pseudocystic cavities must be attributed to œdematous degeneration. From the viewpoint of pathological anatomy this is characterized by infiltration of the fibromatous elements by a liquid which may remain infiltrating or may collect and form pseudocystic cavities of varying dimensions. Clinically the œdematous degeneration manifests itself by a change in the development of the tumor, which, sometimes latent during a period of several years, enlarges rapidly, becomes pseudofluctuating, presenting the aspects of a malignant tumor, whereas it is benign.

Following thirteen observations of œdematous or pseudocystic fibromata, the author states that the fibromata which are most exposed to this œdematous degeneration are partly the subserous type and above all those subjected to phenomena of pressure, as, for instance, the intraligamentous type; then the intramural type, particularly if they are developed in the upper parts or fundus of the uterus. Moreover, the question is ordinarily one of rather large fibromata.



The author next reviews the pathological anatomy of the fibromata from the macroscopic and microscopic points of view and says that oedema sufficiently explains the mechanism of the alterations which are: first, infiltration and disassociation of the elements of the connective tissue; next, the swelling and softening and disassociation of muscular fibers, and the consequent transformation of fibromyomatous tissue into a reticular tissue the meshes of which are distended by the oedema. Moreover, this condition may come to be the seat of necrobiosis. But why and how is oedema produced? It is due to a hindrance of return circulation and to the increase in the number of blood vessels and especially those of embryonic structure. From the point of view of symptomatology and of clinical evolution the two most important and most constant signs are the rapid increase in size, and softening. One must still add hæmorrhages, signs of compression of the bladder and digestive disturbances. The diagnosis may be confused with pregnancy or beginning cysts of the ovaries. It may be very difficult to differentiate from fibrosarcoma of the uterus. The prognosis is generally not serious. In any case it is particularly the symptom of hæmorrhage which demands intervention.

Messa next reports six observations of fibromata attacked by necrosis. Of all the conditions which can influence the appearance of the latter, the most important are certainly those which concern the position and mode of development of the tumor. And it is noteworthy that the intramural fibromata are the most susceptible to necrosis.

Is this due to the fact that uterine contractions release the already weakened connection which exists between the fibromatous nodule and the capsule or does it develop primarily in consequence of thrombosis of the veins? Messa states that he is unable to answer this question.

As regards age, it is particularly women during the period of sexual activity who are subjected. Pregnancy and the puerperium are of great importance, says the author, who next writes a short chapter on the macroscopic and microscopic pathological anatomy of these degenerations.

Necrosis manifests itself clinically by hæmorrhages, menorrhagia and metrorrhagia, to which are often added abundant yellow discharge, by pains, by retention affecting the general state of health, by fever, signs of intoxication of the organism, acetouria, indicanuria, and presence in the urine of albumin and casts, due probably to the action of absorbed toxins upon the kidneys. The diagnosis is generally difficult. The prognosis must be guarded. As to intervention, it is necessary if necrosis is diagnosed or even suspected.

The infectious degenerations of fibromata occur in two distinct forms: suppuration and gangrene or sloughing.

Suppuration is a rare complication. It is encountered especially during the period of sexual activity and the menopause. Generally local and

contracted by contiguity, the infection may be conveyed to the fibroma by extra-uterine means or by the ascending vagino-uterine passage, and it is the latter manner of transmission which is the most frequent and important. Also the fibromata are the more exposed to the infection the nearer they are to the uterine cavity and the submucous type is most often attacked. Clinically, there is more pronounced pain, disturbance of general health, with fever and general emaciation, in these cases than in any others. It generally occurs that locally at the end of a certain period of time the collected pus forces its way out through the tissues, either toward the uterus and vagina (which is most frequent and most favorable), or toward the abdominal pelvic cavity, whence arises local peritonitis if there are adhesions, or general peritonitis. The prognosis is always serious.

Gangrene due to divers microbes (colon bacilli, streptococci, staphylococci), and in the origin of which the anærobes certainly play an important part, attacks the submucous pedicled fibromata and rarely the others. Age seems to play an undoubted part and one notes that the invalids are almost always over forty years of age or even old women. In a general way, these divers degenerations of fibromata favor the establishment of gangrene through disturbances of nutrition or circulation which accompany and determine them.

The diagnosis of gangrenous fibromata is difficult as long as the focus of gangrene does not manifest itself externally, and does not show its presence except by signs denoting the absorption of toxins. On the contrary, diagnosis becomes much easier when the fœtid discharges begin to appear, which, when recognized in a patient having a fibroma, permit very nearly the determination of gangrene or suppuration. It is particularly with cancer of the body or the neck that the diagnosis is confounded.

The prognosis of submucous pedicled fibromata in process of sloughing is not serious in itself and depends above all on early intervention. Hence the treatment in these cases is extirpation as early as possible, the method of procedure depending upon the size of the tumor.

In summing up his work the author says that, in general, fibromatous degenerations are to be found in thirty per cent of cases. From the point of view of the proportion and frequency of various degenerations, out of twenty-five fibromata examined by him Messa found seven cases of fibrous transformation with secondary necrobiosis, calcification and oedema; thirteen cases of pseudocystic oedematous degeneration; six cases of extensive primary necrobiosis; one case of beginning sloughing.

The prognosis of these various degenerations is very variable but in general that of the tumor itself is always more grave. All these degenerations are present in their maximum of frequency between the ages of thirty-five and fifty-five.

As regards treatment it is necessary to operate



at a time when intervention is still simple and free from dangerous consequences.

A. BASSET.

**Sampson: The Influence of Myomata on the Blood Supply of the Uterus, with Special Reference to Abnormal Uterine Bleeding; Based on the Study of 150 Injected Uteri Containing These Tumors.** *Surg., Gynec. & Obst.*, 1913, xvi, 144.

By Surg., Gynec. & Obst.

Menstruation is a venous flow dependent upon changes in the venous plexus of the endometrium; and as there are no valves in the uterine veins, the amount of blood lost is in a large measure regulated by the muscular efficiency of the uterus.

Large subserous myomata are very vascular, and cause a hypertrophy of the uterine artery from which their nutrient vessels arise, and thus more blood is carried to the uterus and tumor, the excess over the normal being diverted to the tumor. The chief arterial and venous changes are in the peripheral zone of the uterus, and menstruation is usually not altered.

Small intramural myomata are less vascular than the myometrium, and usually do not alter menstruation, but occasionally cause uterine inefficiency with accompanying menorrhagia or metrorrhagia.

Large intramural myomata are more vascular (arterially) than is the myometrium, and these cause a dilatation of the venous plexus of the latter, especially about the tumor, but do not necessarily disturb menstruation. When they encroach upon the uterine cavity they intercept the arterial supply of the endometrium over them, and this, with the pressure of the tumor, causes atrophy and anæmia of the overlying mucosa. The endometrium not directly or indirectly encroached upon is always thicker and often actually hypertrophied. The menstrual flow occurs for the most part from the latter. While the profuse flow, when it occurs, is in a measure dependent upon the increased amount of blood in the uterus as a whole and the hypertrophy of portions of its mucosa, it is apparently due more to the failure of the uterus to control this blood, i.e., muscular inefficiency. Occasionally veins over the surface of the tumor may become eroded and give rise to abnormal bleeding.

Submucous myomata represent a later stage of the intramural variety.

Adenomyomata may or may not disturb menstruation, and the factors are apparently the same as in the ordinary variety.

When bleeding arises from the tumor itself, due to sloughing or sarcomatous changes, it is arterial, in contrast to the venous hæmorrhage which occurs from the endometrium.

**Hæmisch: Treatment of Uterine Myomas with X-Rays** (Über die Röntgenbehandlung der Uterus-myome). *Strahlentherap.*, 1913, ii, 249.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 31 cases of uterine myomas and menorrhagias of the most varied kinds treated

with the X-rays. Four cases were not cured, among them one unrecognized case of cancer of the uterus and one unrecognized case of myoma; of the twenty-seven remaining cases three were virtually cured and twenty-four cases were absolutely cured for a period varying from  $\frac{1}{4}$  to  $3\frac{1}{2}$  years. Myomas decreased in size or disappeared entirely; the hæmorrhages ceased completely. The average number of treatments were 4 to 6 series totaling 50 to 60 exposures. A mild transient dermatitis was observed sixteen times and with the exception of a pigmentation there were no other late complications. Technique: Wehnelt inductor—water cooled tube—hardness 6-8 Walter, 7-9 Bauer with  $1\frac{1}{2}$ -2 ma—sole leather or aluminum filter of 2 mm. thickness; four sessions of 5 to 6 min. each on four successive days with 36 cm. focal distance from skin measured 5 to 10X underneath the filter. Two weeks intermission occurred between the series. Application was made from more than one angle only in cases of large tumors. Best results were obtained in patients ranging in age from forty to fifty years. Even the largest tumors, if not too old, may be treated in this way. However, treatment is contra-indicated in submucous, pedunculated, softened and infected tumors. Care must be exerted in depleted women. Cases with a preceding peritonitis and diseases of the adnexa are preferably excluded from treatment. The author warns against the so-called one time maximum exposure and against the use of increasing doses on account of late reaction in the form of skin and intestinal injury. The success of the rays is principally due to the destructions produced in the ovaries and the direct action on the tumors. Psychic influence is not to be considered. Experience teaches that the deep raying of myomas and menstrual anomalies is a powerful and harmless therapeutic agent. Diagnoses and indications, however, must be perfected. Concerning the time and dosage a moderate mean should be adopted.

DORN.

**Suggs: Treatment of a Septic Uterus.** *Tex. St. J. Med.*, 1913, viii, 270.

By Surg., Gynec. & Obst.

The author states that the use of a sharp curette to scrape out a septic uterus is uncalled for; it should never be used. It should be used to remove only loose septic fragments such as an incompletely aborted or particles of retained placenta. Here its use is ended.

Suggs advocates very strongly the use of a continuous intra-uterine douche. He has devised a very ingenious method for giving a continuous douche mixture, with which he claims to have obtained very gratifying results.

His treatment is to pass a Nelaton catheter, No. 8, English, to the fundus after the cervix has been made patulous. Around this in the uterine cavity gauze is packed so as to hold the tube in place, but not too tightly. A fountain syringe is now attached to the tube at an elevation of one foot above the patient. Into the syringe is placed equal



parts of 50 per cent alcohol and a saturated solution of boric acid. A pint of this mixture is passed through the uterus every hour. The author claims that this method will stop any recent infection in from 6 to 24 hours.

EUGENE CARY.

**Klein: Adrenalin and Pituitrin in Dysmenorrhœa** (Adrenalin und Pituitrin bei Dysmenorrhœe). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 169.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In addition to the usual symptomatic treatment, Klein makes use of the biological principle that the harmonious relationship that should exist among the ductless glands and their secretions is disturbed in dysmenorrhœa. Schickele has shown that the hormones of the ovary lower blood-pressure and give the uterine mucosa the power of rendering blood non-coagulable. This change is present during pregnancy, when the maternal blood furnishes nutrition to the embryo. The mucosa of the tubes and sometimes the epithelium of ovarian cysts and vagina have this power as in hæmatocolpos. This action of the hormones decides whether the blood, discharged during menstruation, coagulates or not. Non-coagulability is normal and signifies the proper function of the ovarian secretions. Adrenalin acts in opposition to these oöphorins and during dysmenorrhœa there seems to be an excessive production of them whereby the corpus mucosa becomes over-œdematous. Giving sterile hypodermic injections of 0.0001 to 0.0005 adrenalin hydrochloride, diluted with physiological salt solution, during dysmenorrhœa, caused marked improvement. The duration of menstruation can also be shortened by such injections. When, on the other hand, dysmenorrhœa is due to an insufficient secretion of oöphorins, a combination of adrenalin with pituitrin gives excellent results. The former acts as a vaso-constrictor; the latter causes the uterus to contract, and thus coagulated blood cannot collect in the uterus.

PONFICK.

**Bazy: Technique of Hysterectomy by Anterior Decollation for Double Adherent Salpingitis** (Technique de l'hystérectomie par décollation antérieure pour double salpingite adhérente). *Rev. de gynéc. et de chir. abdom.*, 1912, xix, 529.

By Journal de Chirurgie.

The technique of the operation is well known, the author having performed it a great many times. The uterus is grasped with a volsellum forceps. Its anterior surface is freed and the round ligaments seized by forceps placed 3 or 4 cm. or less from the uterus. The surgeon, standing on the left side, holds the volsellum in his left hand and cuts the right round ligament which is lifted firmly by the forceps attached to it. The assistant continues the traction after the round ligament is cut and thus raises the peritoneum on the anterior surface of the uterus down to the point at which the amputation is to be performed. The peritoneum is then cut until the left round ligament is included. The peritoneum

and vessels are then pushed toward the base and the uterine pedicle freed and ligated. With the right index finger the posterior leaf of the broad ligament is perforated from before backward and immediately below the origin of the round ligaments. The uterine arteries are then clamped. This usually may be done without perforating the posterior leaf, unless the artery is hidden by an overlying inflammation.

The cervix is cut from left to right with a large curved scissors. The inferior segment of the cervix is grasped with two Musuix No. 9 forceps and the superior part of the uterus with another pair. The adnexa are then amputated from below upward and before backward. The utero-ovarian arteries are then ligated and the operation completed as in a panhysterectomy.

GEORGES LABEY.

**Bretschneider: Causes, Therapy and Forensic Importance of Violent Injuries of the Uterus** (Über die Ursachen, Therapie und die forensische Bedeutung der violenten Gebärmutterverletzungen). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 80.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Bretschneider reports four cases of injuries of the uterus; rupture of the uterus during version at the end of the pregnancy; rupture during abortion in the fifth month; perforation during abortion in the third month; and perforation of a senile atrophied uterus with extensive carcinoma of the cervix. He gives the following rules: In apparently uninfected ruptured uteri the immediate suture is preferable to extirpation. Laparotomy has to be performed in all such cases where the perforation was inflicted by instruments larger than a probe. Very careful toilet of the abdominal cavity is of the utmost importance.

The perforation of a sound uterus and failure to recognize the condition as such is a bad technical error, though perforation of a pathologic uterus may occur even in the hands of the skilled man.

ESAU.

**Fletcher: The Cure of Procidentia Uteri in Elderly Women; a New Intra-Abdominal Technique.** *Surg., Gynec. & Obst.*, 1913, xvi, 216.  
By Surg., Gynec. & Obst.

Fletcher's operation is essentially an abdominal hysterectomy, the uterus being amputated at the internal os and the stumps of the broad ligaments, together with the round ligaments, being utilized, according to the Gilliam principles of suspension, as a secure means of supporting the cervix stump and bladder close to the pubic bone.

The abdominal operation is preceded by the following operations on the cervix and vagina: Amputation of cervix, anterior colporrhaphy and perineorrhaphy. The relaxed posterior vaginal wall is resected in a rectangular manner, widely exposing the rectocele and retracted levator ani muscles in the lateral sulci. The defect is closed by means of a Waldo figure-of-eight stitch.



Fletcher says that, "aside from the benefit resulting from plastic work in the vagina, the intra-abdominal procedure accomplishes what Baldy points out for his technique, namely: (1) The weight of the heavy uterus is removed; (2) the overstretched vagina is lifted high and held firmly in place; (3) the supports utilized are natural supports of the uterus and vagina—the broad ligaments; (4) the cervix remains a pelvic organ, as is natural; and (5) the immediate and remote results, as regards fixation of the upper part of the vagina, are perfect."

**III: Further Experiences with the Gilliam Operation for Suspension.** *Am. J. Obst., N. Y.*, 1913, lxvii, 269. By Surg., Gynec. & Obst.

The author reports that in a series of 783 Gilliam operations there was a loss of 3 patients, one of whom died from pneumonia on the tenth day, and a recurrence of the retroversion in seven cases. He has not observed any bowel obstructions in any of this series, nor has he heard of any miscarriages, dystocia, malpresentations, hernias, or bladder disturbances as a result of the operation. In a great many cases there has been pain at the site of the new attachment of the round ligaments in the abdominal wall, which he interpreted as due to adhesions between tube and abdominal wall, and asserts that since care has been taken to prevent a too close approximation of tube and parietes this has not been observed.

This is believed by the author to be the best operation extant for the relief of retrodisplacements. N. SPROAT HEANEY.

**Geist: Histologic Examinations of the Endometrium** (Untersuchungen über die Histologie der Uterusschleim haut). *Arch. f. mikr. Anat.*, Bonn., 1913, lxxxi, 196.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Geist confirms the statements of other workers that the secretory activity of the corporeal glands describes a curve which reaches its high mark just prior to menstruation, continues to exist during pregnancy and decreases during the time of the menstrual flow.

Ciliated epithelial cells, which must always be sharply distinguished from the secretory cells, are found at all times as well as during menstruation and pregnancy. Rod-shaped cells which probably are degenerating secretory cells are found particularly late in the intermenstrual period but never during pregnancy. Cells with "pycnotic nuclei" are artificial products. Cells in the stroma are increased in size during the premenstrual period, decidua-like in character, but never in such numbers that the stroma could be mistaken for a true decidua.

Lymphocytes and neutrophils are present in the apparently normal mucosa, as well as plasma cells which perhaps are the last remnants of a former inflammation. Mast cells appear only during the menstrual and postmenstrual periods.

ASCHHEIM.

**ADNEXAL AND PERIUTERINE CONDITIONS**

**Brooks: Involvement of the Ovary in Epidemic Parotitis, with a Report of Two Cases.** *J. Am. M. Ass.*, 1913, lx, 359.

By Surg., Gynec. & Obst.

In a brief paper Brooks calls attention to the infrequency with which this complication is reported, notwithstanding the constancy with which the possibility is mentioned in articles dealing with epidemic parotitis. Mention, and a brief discussion, of all the cases discovered in the meager literature of the subject follow.

The possibility of confusion in diagnosis with appendicitis and with salpingitis is mentioned and is illustrated by references to the cases recorded by Meisnerhardt and Renon and in Bunt's discussion of parotitis complicating appendicitis. Brooks records two private cases, both occurring in adults and both of unmistakable nature. Prompt recovery took place in each instance, in one of which the additional complication of a double mastitis was present.

He is of the opinion that the complication is more frequent than the literature would indicate, but advances in explanation of its relative infrequency compared to the involvement of the corresponding sexual gland of the male, the protected location of the ovary, which shields it from the minute determinative trauma so likely to occur in the male. He is also of the opinion, with Trousseau, that involvement of the ovary is a benign complication of mumps. Attention is called to the probability that sterility is not likely to follow this lesion, because of the anatomical structure of the ovary and its prompt recovery under probably analogous lesions in other diseases.

The report is made in the hope that it may stimulate others to record instances of ovarian involvement in epidemic parotitis, so that a true estimate of its frequency and a more certain knowledge of its effects may be reached.

**Stolper: The Influence of the Ovary on the Sugar Metabolism** (Über den Einfluss der weiblichen Keimdrüse auf den Zuckerstoffwechsel). *Gynäk. Rundschau.*, 1913, vii, 93.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Thirty-two pregnant women were kept on a regular diet, while thirty others were given 100 gm. glucose. Six out of the first group and 21 of the second group showed glycosuria. Spontaneous excretion of sugar occurred in three and a change in tolerance towards glucose in two of five cases of hyperemesis. Of 180 cases of myomata and ovarian cysts one was complicated with diabetes which was not influenced by operation. The limit of assimilation of sugar was increased in most of the myoma cases, whereas it was normal or decreased in diseases of the ovaries. Decreased sugar tolerance was always present in climacteric women, and noted 13 times in 16 castrated women. Referring to former experiments the author asserts that absence of ovarian function



causes a diminution of the limit of assimilation of sugar by its influence on the pancreas and adrenals.  
JONAS.

**Escher: Pigment of the Corpus Luteum** (Über den Farbstoff des Corpus luteum). *Hoppe-Seyler's Ztschr. f. Physiol. Chem.*, 1913, lxxxiii, 198.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In order to isolate the pigment of the corpus luteum the ovaries of cows are dehydrated with alcohol and the yellow pigment is dissolved with petroleum ether. The extract, after washing with alcohol, is condensed at a low temperature until the pigment crystallizes out of the filtrate. From 146 kg. of ovarian tissue, 0.45 g. was isolated or 0.0031 g. from one kg. The pigment belongs to the luteini group of hydrocarbons, and is in every respect identical with carotin of carrots and of green leaves. For this reason the name "corpus luteum carotin" is suggested. Even the melting points of these three substances are identical. Chloroform and benzol are better solvents than boiling alcohol or petroleum ether. It forms a red solution in carbon-disulphide. In concentrated solution it appears blue. With concentrated sulphuric acid it forms the indigo-blue coloration characteristic for this group of hydrocarbons. In reflected light, the rhomboid crystals appear copper or chocolate colored. The spectroscope fails to reveal a difference between the animal and vegetable carotin. A tri-iodid of ovarian carotin has been made that is like the tri-iodid from vegetable carotin. The origin and function of the pigment are unknown. It is probably an intracellular glandular pigment. Piccolo and Lieben claim it is not the same substance as homatoidin or bilirubin; Holm makes the same assertion in regard to bilirubin.

ZWEIFEL.

**Bazy: Placental Carcinoma or Malignant Chorio-epithelioma of the Tube.** (Carcinome placentaire ou choiro-épithéliome malin de la trompe). *Bull. et mem. Soc. de chir., Par.*, 1913, xxxix, 219.  
By Journal de Chirurgie.

The case is one of a woman 25 years old who presented signs of pregnancy (absence of menstrual flow for seven months and increase in the size of the abdomen). She consulted Prof. Ribermont-Desaignes for incorrigible vomiting, loss of weight and extreme anæmia from which she had been suffering some time.

Upon operation the author found a tumor the size of an adult head in the right corner of the uterus, which was firmly adherent to the uterus and resembled a sponge engorged with blood. When the tumor was touched bloody effusions with considerable hæmorrhage resulted. After trying in vain to enucleate the tumor which was very friable, Bazy decided to remove, *en masse*, the tumor and uterus. The cystic left adnexa were removed secondarily.

The patient died thirty hours after the operation. Histological examination showed the tumor was a malignant chorio-epithelioma of the Fallopian tube.

Bazy has been able to find only 11 other such tumors in the literature. They develop as do analogous tumors of the uterus from the ectodermic covering of the chorionic villi but do not as in the uterus follow a hydatiform mole. This would seem to show a difference between tubal and uterine placental tissue.

Clinically these tumors have never been diagnosed. The prognosis is bad as in all 12 cases death has followed either from shock of the operation or from metastatic tumors.  
J. DUMONT.

**Geist: Senile Involution of the Fallopian Tubes** (Die senile Involution der Eileiter). *Arch. f. mikr. Anat.*, Bonn., 1913, lxxxi, 220.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Macroscopically the involution chiefly involves the mucosa, less the other coats. Microscopically the disappearance of the lateral folds and the diminution and shortening of the principal folds are noticeable. The diminution in size and disappearance of the folds may lead to complete obliteration. A moderate proliferation of connective tissue of the principal folds exists and the muscular layer shows considerable connective tissue hyperplasia and a disappearance of the elastic fibers. The vessels show changes similar to those described as sclerosis of pregnancy in uterus and ovary. The epithelium is considerably altered. In place of the ciliated and secreting epithelium is found an indifferent cell, frequently simulating endothelium, but occasionally ciliated epithelium remains even in completed atrophy. The usual changes in the ciliated epithelium are the loss of cilia and basal layer; in addition there is the appearance of characteristic granules in the upper part of the ciliated cells which cannot be correctly interpreted.  
ASCHHEIM.

**Fullerton: Typho-Tuberculous Tubo-Ovarian Abscess.** *Surg., Gynec. & Obst.*, 1913, xvi, 180.  
By Surg., Gynec. & Obst.

In searching the literature the author finds but three cases reported of typhoid infection of the female genitalia, and one of these, on account of inaccurate bacteriological study, is doubtful.

He reports a case operated on for chronic pelvic inflammatory disease 14 weeks after an attack of typhoid fever. Adherent bilateral tubo-ovarian masses were removed which contained pus from which a pure culture of *B. typhosus* was obtained, and on microscopic examination a diffuse tuberculosis was found involving both tubes and ovaries. The pelvic tuberculosis was most probably secondary to a limited apical involvement of both lungs.

Since typhoid fever is a septicæmia in its early stages, with not uncommon post-typhoid suppurations and infections elsewhere in the body, and in view of the fact that the female genitalia are frequently already the site of some disorder, which would favor a secondary infection, the author concludes that post-typhoid pelvic infections, primary or secondary, are much more common than



reported, and that the simplest, most common and rational means of infection is by way of the blood stream, though he does not exclude other possibilities.

He urges careful inquiry as to previous typhoid infections in all cases of pelvic infection and accurate bacteriological study of every case at operation.

**Neu: Diagnosis and Treatment of Gonorrhœa of the Adnexa** (Zur spezifischen Diagnostik und Therapie der weiblichen Adnexgonorrhœe). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 182.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reviews the more important advances recently made in diagnosis and therapy. The opsonic index is generally dispensed with in vaccine diagnosis of gonorrhœa. Passive immunity experiments are fruitless, and active immunity is only partially successful. Although the results of various investigators differ yet it would appear that gonorrhœal pyosalpinx can be very favorably treated by the method of Fromme-Collmann by Reiter's vaccine, and by Bruck's Orthigon. Local or focal reactions are of no diagnostic value and the general reaction should be positive when it causes a  $1^{\circ}$  rise in temperature. Neu has made use of these diagnostic and therapeutic measures in 26 cases and comes to the conclusion that gonococcal vaccination is of very little therapeutic value. He failed to get a cure and in only one case did he get improvement. The author offers no explanation with regard to his negative results, and suggests that it is possible that vaccine therapy will become more useful when we know about more it. In suspected tubal pregnancy the physician should use caution in vaccinating with arthigon.

WILLMANN.

**Lörincz: Treatment of Inflammatory Adnexal Tumors with Intra-uterine Injections** (Die Behandlung entzündlicher Adnextumoren mittels intra-uterinen Einspritzungen). *Gyógydszat*, 1913, liii, 40.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The injection of a two per cent solution of argentine into the cavity of the uterus is a procedure devoid of danger if certain measures of precaution are taken. In tubal diseases this method of treatment must be designated as a very successful one, as a marked improvement or complete recovery took place in almost all the author's cases. However, if this excellent curative action of the argentine injections is more exactly analyzed, the improvement can not be ascribed solely to the remedy, since treatment lasts from five to six weeks (25 to 40 injections), and absolute rest in bed during this time is an important factor in the result, as the author demonstrates in his histories. Nevertheless, results obtained with the argentine injections are very good. An important advantage in the use of this solution is to have the cervical canal so widened that the injected fluid can flow out again. Of advantage also is its hyperæmic action on the entire genital canal. If after five or

six weeks' treatment no improvement occurs, surgical intervention is indicated.

SCHERER.

**Langes: A New Method of Shortening the Round Ligament** (Eine neue Methode der intraperitonealen Verkürzung der Ligamenta rotunda). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 15.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

An ideal method should strengthen the round ligament in its entire length and the uterus should be fixed in physiological antelexion. The author's technique is as follows: After making a transverse incision, the round ligament is divided into thirds by 2 blunt clamps. The clamps are then so approximated that three folds of ligament lie parallel. The distal loop is fixed with silk button-hole sutures to the internal inguinal ring. If the external ring is not prominent the needle is passed through the deep abdominal fascia. The proximal loop is then sewn to the fundus at the attachment of the round ligament. The three parallel portions of the ligament are then united by a continuous catgut suture. This operation was performed in 10 cases, 7 of retroflexion, and 3 where unilateral ovarian tumors were removed, the shortening being done on the healthy side.

MEYER.

**Beuttner: The Excision of Inflamed Appendages** (Zur Technik der Exstirpation Entzündlich Erkrankter Adnexe am Hand, von Hundert Einschlagenden Operationen). *Cor.-Bl. f. Schweiz. Ärzte*, 1913, xliii, 2.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

At Geneva great conservatism is used in treating inflamed adnexa. When operation is necessary the abdominal avenue is preferred, the technique of which operation is given by Faure. The salient feature of his method is that the removal is begun in the mid-line and continued laterally and from below upwards.

The author has practiced the following methods: (1) supravaginal amputation of the uterus by the hemisection of Faure; (2) supravaginal amputation and extirpation of adnexa with anterior decollation according to Kelly-Faure; (3) the same operation with posterior decollation as practiced by Faure; (4) the same operation according to Kelly's method; (5) transverse wedge-excision of the fundus as a preliminary to the adnex extirpation of Beuttner; (6) uterus and adnex excision of Richelot; (7) atypical operations; (8) simple adnex extirpations.

The transverse wedge-excision of the fundus of the author has the aim of preserving one or both inflamed tubes in relatively young women whereby menstruation and ovulation can be preserved. The plane of incision in this operation, as in most of the others, is through the fascia transverse of Pfannenstiel. The operation to be used should be decided by the case at hand.

The vaginal method is inferior to the abdominal.

BURK.



**Hörrmann: Rare Clinical Signs of a Pelvic Connective Tissue Cyst; Epidermoidal Cyst** (Seltene klinische Erscheinungen einer Beckenbindegewebs-cyste; Epidermoidcyste). *Zentralbl. f. Gynäk.*, 1913 xxxvii, 240.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author reports the observation of a firm cyst with serous contents in a multipara 50 years old. It was the size of a small child's head, situated retro-vaginally. It pushed the posterior vaginal wall forward in such a manner that the upper portion of the vagina became temporarily closed. A purulent, bad smelling discharge caused a temporary pyocolpos by a retention and infection of the vaginal and cervical secretion, which was expelled in large quantities, at times in gushes, by abdominal pressure and palpation. As puncture of cyst was not successful, the cyst sac was totally extirpated, after which complete recovery occurred. The cyst was intimately adherent to the neighboring organs and extended with funnel-like processes beneath and posterior to the rectum and to the vaginal walls. It continued with a funnel-shaped process upwards to the sacrum. The wall of the cyst consisted of connective tissue permeated with muscular fibers. Its inner layer was formed of stratified squamous epithelium and connective tissue showing a few masses of foreign giant cells, enclosing transparent threadlike structures which were partially stained brown (remnants of hair?). Various possibilities must be entertained for the interpretation and origin of a pelvic connective tissue cyst located entirely extraperitoneal; cysts of the Wolffian ducts, cystic embryomata of the sacrococcygeal region of the pelvic connective tissue, glands of the foetal vaginal wall or its surroundings or of the vestibular endoderm, and finally, inclusions of the Caudal ducts on account of the firm coalescence with the sacrum.

ECKERT.

## VAGINA

**Kuhn: The Biologic Factor in the Treatment of the Vagina** (Das biologische Moment bei Behandlung der Vagina). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 228.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The biologic process to which the continued acid reaction of the vaginal secretion can be contributed is the principal safeguard of the vagina and in the presence of pathologic processes the end object of our therapeutic efforts. An alkaline reaction of the body fluids is detrimental to this structure. By the injection of a sugar solution it is not difficult to produce and maintain in a fermenting mixture an acid reaction. The metabolism of bacterial organisms can be altered by the presence of sugar and this not only once but on account of continued growth of the organisms indefinitely. This has been proven for colon bacilli and also for the other ordinary inhabitants of the vagina which in the presence of sugar become and remain acid producers. Kuhn attributes the result of treatment of vaginitis by means of yeast according to Landau not to the

action of yeast but to its contents of sugar, as sterile yeast causes a change in the reaction of vaginal secretion and a decrease in the virulence of the infection. He attributes all results obtained to the biologic process of fermentation in the vagina which tends to the formation of acids and is the result of the simultaneous introduction of sugar. A good part of the beneficial action of glycerine treatment is attributed to the same fact. Concentrated solutions of glycerine act the same as sugar, i. e., bactericidal. In dilute solution, glycerine influences the growth of bacteria and their metabolism. After removal of the glycerine tampons from the vagina, glycerine remains in weak solutions and causes an active growth of bacteria and the formation of acid products.

GRÜNBAUM.

**Gottschalk: About Causes and Treatment of Discharges from the Female Genital Organs** (Über die Ursachen und die Behandlung des Ausflusses aus den weiblichen Genitale). *Deutsche med. Wchnschr.*, 1913, xxxix, 249.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Leucorrhœa is a symptom and not a clinical entity. The most frequent cause of purulent catarrhs in children, as well as in adults, is gonorrhœa. Leucorrhœa during the years of development is caused by scrofulosis, anæmia, or due to masturbation. After a cured gonorrhœa in the male the remaining mucous shreds may cause chemically and toxically a purulent non-specific discharge in the vagina. An bacterial discharge can also be caused by a hypoplastic or hypotrophic glandular endometritis, just so cervical mucous polypi and glandular or papillary erosions of the cervix. Discharges like meat washings may be an early symptom of malignancy; a degenerating myoma may, however, emit a foul smelling discharge. A genuine vaginal discharge may be caused by colpitis senilis. In senile endometritis there is also occasionally a foul smelling, bloody tinged flow. Coitus interruptus will in time produce a discharge, as also foreign bodies, especially metal intra-uterine pessaries. A profuse bloody mucous discharge is caused by tuberculosis of the endometrium and the cervix. Hydrops and cancer of the tube are accompanied by a flow which is produced by the tube itself, whereas adnexal diseases only secondarily cause a flow by congestion and hyperæmia of the uterus. Treatment in each case must be based on the causal factor.

EHRENBERG.

**Wolkowitsch: A Case of Persistent Incontinence of Urine in a Woman with Serious Vesicovaginal Fistule** (Ein Fall von hartnäckiger Harninkontinenz bei einer Frau, der durch die von mir vorgeschlagene Operationsmethode bei schweren Blasen-scheidenfisteln geheilt wurde). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 202.

By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

The author operated on a 24-year-old nullipara for incontinence of the bladder. He used Gersuny's method of twisting the urethra. The patient had



been subjected to the same operation once before. This second operation turned out a failure as in the first instance and resulted in the formation of a urethra-vaginal fistula. The latter was closed and the incontinence was cured by ante-position of the uterus below the fistula. The anterior vaginal wall was incised longitudinally, the uterus was drawn downward, and the cervix of the uterus was sutured into the region where the fistula had existed by applying two silk threads to the vaginal wall. The sutures remained sixteen days. After the operation the cervix protruded a little through the external urethral orifice.

KOLB.

**Stewart: Formation of an Artificial Vagina by Intestinal Transplantation.** *Ann. Surg., Phila.*, 1913, lvii, 210.  
By Surg., Gynec. & Obst.

Stewart reports a case of acquired vaginal atresia, where the patient had undergone a panhysterectomy seven years previously for uterine carcinoma and an extensive vesico-vaginal fistula had resulted. After repeated attempts at closure of the fistula, the vagina had become shrunken until it measured but two inches in depth and two in width. At the last attempt to repair the vesical opening, the entire vaginal mucosa was excised except for an area on the posterior wall corresponding to the vesical opening. The posterior vaginal wall was then separated from the rectum and sutured to the anterior wall, the undermined portion being fitted to the opening in the bladder. Healing occurred promptly and fortunately, except for a small urinary fistula opening on the perineum. Three months later the patient returned for the purpose of having a vagina formed. With the lithotomy position, an incision was made between the labia and a space created between the bladder and rectum. This was deepened by blunt dissection until the peritoneum had been opened, and a tampon was inserted. Abdominal incision was then made, and a ten-inch portion of the ileum, not far from the cæcum, was resected, the proximal half being allowed to remain attached by its mesentery. The open ends of the bowel having been anastomosed to preserve the intestinal continuity, the resected portion was drawn down into the space made between the rectum and bladder as far as the vulva. The vesical peritoneum was next sutured to that of the sigmoid flexure around the transplanted intestine, after which the abdominal wall was closed. With the patient again in the lithotomy position, that part of the ileum lying against the bladder was fixed in position with sutures. The portion protruding from the vulva was cut off and the open intestinal margin was sutured to the vulva orifice. The new vagina was packed with gauze to keep its walls against the edges of the dissected space. Again the patient recovered uneventfully, except for a slight urinary leak just below the urethral orifice. One year later the result was satisfactory. Stewart's paper closed with a short reference to the nine other cases thus operated upon.

CAREY CULBERTSON.

**Daniel: Tuberculous Elephantiasis of the Vulva** (Die elephantiasische Tuberkulose der Vulva). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 65.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Daniel describes a case of tuberculosis of the vulva in which the labia and præputium clitoridis are hypertrophied and the inguinal glands enlarged. The husband was tuberculous and syphilitic and the patient had had three miscarriages. The Wassermann reaction was negative, the ophthalmic reaction positive and anti-luetic treatment had no effect on the disease. Extirpation of the diseased parts and of the inguinal glands resulted in cure. This is a case of non-ulcerating tuberculous elephantiasis, probably of primary origin. Clinically, there are three types of tuberculosis of the vulva: 1, cutaneous, lupus vulvæ; 2, ulcer or ulcerous hypertrophy; 3, elephantiac non-ulcerating. The third is characterized by hypertrophy and œdema of the affected parts. In order to make the diagnosis the inguinal glands, the lungs, a possible ophthalmic reaction and the genitalia of the husband must receive consideration. Should a piece of the tumor be excised and examined it is advisable to make many sections, for frequently the tuberculous follicles are rare, and only the bacilli are found. The author's case is a primary tuberculosis of the vulva, for the husband has tuberculosis, probably transmitting infection through the spermatozoa.

Radical operation is at present better than radium therapy or electrolysis. Daniel makes two concentric incisions in the form of a horse-shoe with the concavity downwards, in such a manner as to include the large and small labiæ. Should the inguinal glands be infected they are removed by an extra incision with the concavity upwards, whereby the two inguinal folds are united transversely. Thus the diseased vulva and glands can be removed in one mass. The sutured wound has a  $\lambda$ -form after the former operation, and a  $\pi$ -form after the latter.

BRETZ.

#### MISCELLANEOUS

**Levy-Dorn: X-Ray Therapy in Gynecology** (Zur Frage der gynäkologischen Röntgenbestrahlungen). *Fortschr. a. d. Geb. d. Röntgenstr.*, 1913, xix, 407.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Levy-Dorn treated 41 cases (14 fibroids, the rest metorrhagia and climacteric hæmorrhage) with X-rays, using four methods of application. First, 10 exposures on the abdomen and 10 on the back with the tube 40 cm. distant. Amenorrhœa resulted only in exceptional cases; the symptoms came back in six months, but the fibroids underwent atrophy. Second, exposure as above except that a leather filter was made use of. The results were the same as before. Third, radial illumination was employed from four sides, using the leather filter, at a focal distance of 20 to 25 cm. Amenorrhœa resulted more often. Fourth, the rays were



applied from numerous angles, a 2 mm. aluminum filter was used, and the patient was exposed 10 to 15 times within several days. This method must be used with great caution and is more expensive as well as harder on the apparatus. Sabourand and Noire's radiometer was used.

DORN.

**Krönig: The Therapeutic Value of Actinic Rays: X-Ray or Radium Treatment** (Die Strahlentherapie in der Gynäkologie: Röntgen oder Radiumtherapie). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 153.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The action of radioactive substances is analogous to that of X-rays. In both instances the softer rays are only used for the cure of lesions on the body surface, the hard filtered ultrapenetrating rays for the deeper lying organs. It is possible to increase the intensity of the radium emanations by increasing the quantity of material used and by applying them to the lesions from several angles. The mesothorium offers the possibility of using large doses on account of its relative cheapness. Great care must be exercised in the use of the different preparations, as they vary in their action. The method of treatment also depends on the quantity of the substance, the size of the area to be exposed, the manner of packing—whether flat or cylindrical, and on the thickness and nature of the filter. Finally, different people react very differently to the same exposure with the same substance. Of particular interest is the rapidity of the effect of radium emanations as compared with those of the X-rays. With radium the effect is occasionally obtained after the first exposure, whereas with X-rays six or even more exposures are necessary to obtain any results. Radium probably acts on the uterine musculature and the ovary. While the action of radium is chiefly hæmostatic, the retrogression of myomas does not occur in the same degree as with X-ray treatment even though all indications point to the probability that this latter action will be obtained with radium in the near future. At the present time the X-rays must be given the preference in all severe cases especially in large myomas. Of much prominence is the combined Röntgen and radium treatment (intra-uterine application of radium—externally applied X-rays). With this combined method, the annoying hæmorrhages which occasionally continue to exist after the first few X-ray treatments will be rapidly and safely checked.

IMMELMANN.

**Scherber: Etiology and Treatment of Some Rare Ulcers of the Female Genital Organs** (Zur Klinik und Ätiologie einiger am weiblichen Genitale auftretender seltener Geschwürsformen). *Dermat. Ztschr.*, Berl., 1913, xx, 140.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Two ulcers are described that had been considered aphthous. Both are painful and in neither case are the inguinal glands enlarged.

**CASE 1.** The ulcer is sharply circumscribed and has a punched-out appearance. The size varies

from a pea to a dime, and after removing the thin, grayish-yellow contents the floor appears granular. B. pseudodiphtheriæ, staphylococci and streptococci were found. The ulcer is aphthous.

**CASE 2.** At the vestibulum vulvæ pin head-sized grayish yellow nodules appeared and these broke down in the center and left small ulcerations with a gray-white crust and inflamed border. These small ulcerations become confluent and leave a larger area covered with this pseudomembrane. The floor of the ulcer bleeds easily when the membrane is scraped off. Bacteriological examination revealed the staphylococcus aureus and a quite long and thick, gram-positive bacillus. The author considers the latter a distinct species, and calls the ulcers "pseudo-tuberculous."

WIEMER.

**Bumm: Treatment of Wounds After the Radical Operation for Carcinoma of the Cervix** (Zur Frage der Wundversorgung bei der Radikaloperation des Ca. colli uteri). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Only the flawless, healthy, non-infected peritoneal suture promises good post-operative results. Then micro-organisms are harmless and tampons and drainage unnecessary. In 130 tamponed cases the author had a mortality of 29.7 per cent. But in the last 100 cases in which he used the double serous suture the mortality was 6 per cent, four dying of peritonitis, one of whom had had fever before the operation. The raw areas at the posterior surface of the bladder and the anterior surface of the rectum are first covered, and then the parametric spaces are closed, partly with interrupted and partly with continuous sutures. Then a second continuous serous suture with thin catgut covers the first line of sutures like a true Lembert. The mesentery of the flexure and the serosa of the rectum supply the necessary peritoneum. In 20 out of 42 cases the swab-test was positive, even streptococci being found, but no symptoms developed. There was no vomiting in 55 cases and meteorism invariably disappeared within the first 24 hours. It is best not to operate during febrile or subfebrile conditions. As a preliminary to operation the carcinoma is cleaned out until dry with the curette and thermocautery. Sublimate alcohol is used as disinfectant and the exposed areas are packed with a 10 per cent silver nitrate solution on gauze. Gauze is sewn over the edges of the abdominal wound and the rest of the prophylaxis is as usual. Bleeding vessels are ligated, and during the excision of glands in the vascular triangle the ligation needle is held ready for use. Double ligation without extirpation of the kidney suffices in cases of accident to the ureter near the kidney.

FLATAU.

**Bossi: Ovarian and Uterine Disease and Psychopathy** (Eierstocks-Uteruskrankheiten und Psychopathien). *Frauenarzt*, 1913, xxviii, 7.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

To clinicians, sociologists, legislators and to the public, Bossi points out repeatedly the relation of



many diseases of the female genital organs to mental diseases which for many years he has claimed to exist, without, however, wishing to put the brain of women into the "small pelvis," and without intending generalization. Heredity, predisposition and general circumstances must be taken under consideration. In heredity gynecologic prophylaxis is demanded, as well as medicinal, surgical and other preventive measures. This is based on the conception that infectious or toxæmic diseases of female or male organs located far from the brain may cause symptom groups characterizing various mental disorders. Upon the same theory is based the author's opinion that disturbances in mental balance are not so frequently found in the most conspicuous gynecologic diseases, as, for example, in tumors, but most often in chronic infectious endometritis of slow course, pus retention and other toxic elements in the uterine cavity, resulting from kinking and flexion of the uterus, or in cases in which amenorrhœa, or even diminished menstruation, is complicated with endometritis. Errors and blunders in the treatment of the insane are discussed in detail. To the gynecologist and other specialists of the medical profession the doors of the insane asylum should be widely opened.

Bossi closes with the report of two women who were admitted with the diagnosis of dementia præco and chorea. They were both treated and cured, the one from endocervicitis, the other from retrodeviation of the uterus, both of puerperal origin, and both were cured from the psychopathic symptoms permanently, as there was no relapse after renewed pregnancy and labor.

STAHLER.

**Watson: General Peritonitis in Gynecological and Obstetrical Practice.** *Canad. J. M. & S.*, 1913, xxxiii, 125.

By Surg., Gynec. & Obst.

The author calls attention to the rarity of general peritonitis from pelvic lesions as compared with general peritonitis from other causes. This immunity is explained by the greater tissue reaction limiting the infection, the less virulent type of the bacterial invasion, the small degree of visceral movement, and the low location of the pelvic peritoneum. The chief source of peritoneal infection is the Fallopian tube, with extension through the ostium by the lymphatics through the tube wall. Accompanying this we have peritoneal adhesions. When the infection is due to a gonococcus it has a tendency to die and to be replaced by a colon bacillus, which eventually becomes sterile. The chance of rupture of a pus tube is exceedingly slight, but owing to the high mortality when the rupture occurs, the patient should be advised to submit to immediate operation, with an exploratory incision from below if possible, either draining the pus or removing the infected tube which is the source of infection. Drainage should be made through the vault of the vagina, and if the abdomen has been opened both vaginal and abdominal drainage is recommended.

Conservative treatment of the tubes is sometimes

possible. After the inflammation subsides, the tubes may remain patent and the woman's procreative function thus saved. The author emphasizes the importance of non-operative treatment during the acute infective state, and says that if necessary we must wait even months for the active symptoms to subside before doing a radical operation. During the waiting period the mixed stock gonococcic bacterin may be tried.

Attention is called to the prophylactic treatment in puerperal infections, and to the fact that the vagina frequently contains potentially virulent micro-organisms; and the author warns us against passing the hands through this dirty field into the uterus after small pieces of placenta and membranes. He also insists that irrigation of the uterus is equally dangerous.

ROBERT T. GILMORE.

**Sippel: Difficulties in Gynecological Differential Diagnosis** (Über differentiell-diagnostische Schwierigkeiten in der Gynäkologie). *Deutsche med. Wchnschr.*, 1913, xxxix, 263.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

One of the greatest difficulties in gynecological differential diagnosis is to distinguish between hysteria and a truly local trouble in or about the internal female genital organs. If it is impossible to elicit more signs or symptoms after repeated examinations narcosis will often help decide to which category the ailment belongs. The anæsthesia should be just deep enough to do away with normal reflexes. If it is then possible to elicit a reflex while examining, one can rest assured that he is not dealing with hysteria, for in local disease the local reflexes are exaggerated and it is possible to elicit them while the other reflexes of the body are absent.

Improper localization of pain is another bugbear in gynecology. The elevated lithotomy position aids greatly in doing away with this difficulty. The author cites a recent case of teratoma in the left ovary that had been repeatedly diagnosed as missed abortion with the gestation sac in the right uterine horn.

WEBER.

**Kostmayer and Gelpi: Developmental Defects of the Female Genitalia; Report of Five Cases.**

*N. Orleans M. & S. J.*, 1913, lxxv, 573.

By Surg., Gynec. & Obst.

Out of 1000 women examined in the New Orleans Charity Hospital outdoor gynecological clinic, from May 1, 1911, to April 16, 1912, there were but five cases of gross faulty or abnormal development of the genitalia — a little less than 0.5 per cent. The cases were all negroes, and their ages varied from 15 to 35 years. None of the cases except one, a girl of 15, showed any signs of underdevelopment or other abnormality than that of the genitalia.

The first case cited was that of absence of the labia minora and absent uterus. Case 2 had a uterus the size of a thimble — the organ was practically absent. The authors believe that the



ovaries were absent here also. The third case had practically the same uterine abnormality as Case 1. The fourth case was that of a transverse septum dividing the vagina into an upper and lower cavity. Case 5 had a longitudinal septum forming a double vagina. The cases are tabulated as follows:

Total Number of Cases Seen, 1000.	Cases Per Cent.
1. Deformities of the uterus due to failure of fusion of the Müllerian ducts.....	0 0
2. Deformities of the uterus due to faulty development of the Müllerian ducts.....	3 .003
3. Deformities occurring lower down in the urogenital tract, affecting especially the vagina.....	2 .002
4. Cases showing more than one gross congenital abnormality.....	2 .002
5. Total number of gross abnormalities in the series.....	5 .005

The article is concluded by calling attention to the source of these abnormalities and their close connection with the development of the Müllerian ducts and the genital tubercle.

**Haim: Local Anæsthesia in Minor Surgical Gynecology** (Über Lokalanästhesie in der kleinen Operativen Gynäkologie). *Prag. med. Wchnschr.*, 1913, xxxviii, 98.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Local anæsthesia should be more extensively used in minor surgical cases, not only in the office of the practicing physician, but also in his work at the home of his patients. For example, in cases of incomplete abortion of the first few weeks, when the os is insufficiently dilated, also when an abrasion is made in endometritis. In this way dilation can be accomplished in one operation. The technique is very simple: a fresh 1 per cent solution of novocaine is made by dissolving 2 novocaine (0.125)—suprarenin (0.00016) tablets in sterile 0.9 per cent NaCl solution. The portio is brought into view by the aid of a self-retaining speculum, seized firmly with a forceps and 5 cc. solution is injected where the anterior vaginal wall passes over into the portio (use a 5 cc. Record syringe with a 6-8 cm. tip). The needle is then inserted first 2 cm. to the right (in the paracervical tissue), then to the left. In each instance the needle is plunged about 1½ cm. into the tissue. Finally 5 cc. are injected into the posterior vaginal port and in 5 or 10 minutes a painless operation can be begun. Should the patient be very sensitive, a 2 per cent solution of the non-poisonous novocaine acts very well. Hegars dilators work more satisfactorily with such an anæsthesia. In eclampsia it serves a useful purpose for it prevents the sensory stimulation of these parts, and the os dilates more freely. Such anæsthesia is practical in cases of vaginismus, dilatation during dysmenorrhœa and for the removal of hæmorrhoids (the sphincter dilates easily). An injection into the perineum before the head passes, in obstetrical cases, not only brings about anæsthesia but prevents spasmodic contraction of the muscles. A perineal

tear can be sutured without pain. Old perineal tears, colpoperineorrhaphy, operations on the cervix, vagina and labia are painlessly performed by the use of the novocain injections.

In Kraatz's Alexander-Adams operation 5 cc. of a 1 per cent solution are injected 1 cm. below and median to the spina ossis ilii ant. sup., directly under the fasciæ of the oblique muscle, 5 cc. into the tissue about the internal ring (1 cm. above the middle of Poupart's ligament), and a third syringeful is injected into the inguinal canal (the needle is inserted below the fascia at the tub. pubis and emptied in the direction of the canal). In 5 to 8 minutes anæsthesia of the parts is complete. HERZOG.

**Gaitschmann: Congenital Absence of One Kidney with Anomaly of Development of the Genital Organs** (Angeborenes Fehlen einer Niere [Agenesia renis] mit gleichzeitiger Wachstumsanomalie der Geschlechtsorgane.) *Russ. Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 69.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was well developed, 16 years old and a twin. For the last two years menstruation has been regular, but the last two periods were very painful and intermenstrual pain had also been complained of. The clinical diagnosis was uterus bicornis duplex cum vagina septa. The right vagina was obliterated in its lower part, a hematometra and hematocolpos dextra resulting. On sounding the right horn a quantity of old blood escaped, following which the temperature rose to 40° C. (104° F). On the sixth day peritonitis set in, and on the ninth day death occurred. At autopsy the intestines were found to be covered with fibrinoplastic exudate, likewise the genital organs. On the right side, however, was a hematosalpinx. The cæcum was completely buried by adhesions.

The right kidney was absent, but the suprarenal gland was in a normal location. The bladder had only the left ureter emptying into it.

This anomalous development, according to Gaitschmann, is to be interpreted as a result of an inflammation during the embryonal period. The aplasia of the kidney was not discovered until autopsy. Gaitschmann advises first laparotomy with removal of hematosalpinx which can more safely be done than by emptying the hematocolpos through the vagina. The hematosalpinx may tear or secondary infection may be set up in it by the latter method. GINSBURG.

**Marro: Cystic Dilatation of the Terminal Portion of the Right Ureter, Emerging Outward into the Labia Majora** (Dilatation kystique terminale de l'uretère droit, prolabée en dehors des grandes lèvres). *Gior. d. R. accad. de med. de Torino*, 1912, lxxv, 197.

By Journal de Chirurgie.

These observations were upon a woman of 35 years who had had three confinements during the past eight years. The first two were without complications. Immediately after the third, she began noticing a projection from the urethral meatus. Upon inquiring into the history, it was found that



she had had difficulty in urination for four years. This difficulty would suddenly become relieved, when the patient experienced a sensation as if something had slipped out of place. Upon examination of the external genitals, a tumor was found. This was somewhat rounded and flattened laterally. It was of a dull red color, was soft, and when palpated gave the impression of fluctuation. This structure emerged from the urinary meatus, which had a diameter of 3 cm. and was directed posteriorly. The finger could be easily introduced into the bladder. The mass seen externally could be felt to be connected with the posterior inferior part of the bladder.

Under spinal anæsthesia the left ureter was repaired, starting at a point where the interuretral muscle begins. This muscle extended around to the anterior surface of the distended part. There was no blocking of the right ureter. The left kidney could not be palpated but the right was low, large, and movable. During the operation, the constant traction of the distended part caused a small drop of pus to exude from the ureteral meatus. There was a small ulcerated area from which more pus could be squeezed. The catheter was introduced into the pelvis of the kidney and 20 cubic cm. of pus extracted.

The catheter was left in the ureter and during the next 12 hours 200 cm. of pus passed out. The pelvis could be washed through the same catheter. Gradually the amount of pus diminished from the right side and there was soon as much urine coming from this side as from the left. It was almost as rich in urates.

About a month after the first operation a more extensive procedure was undertaken. Under spinal anæsthesia a laparotomy was done. The distended part was resected down to the bladder wall. The ureter was then sutured into the bladder wall by a series of sutures in a U shape. At the new opening the ureter had a diameter of one cm. Its muscular wall was smaller and reddened. The bladder was closed. A sound was left in the ureter.

In twenty-four hours after the operation there were about 100 grs. of bloody urine passed. The irrigation of the ureter with a silver nitrate solution was continued.

At the end of three weeks the catheters were removed and the patient got up. Eight days later there was no albumin or pus in her urine. She passed 1600 cc. of urine with 13 grs. of urates.

Seen three years after the operation, the patient was well and had no urinary trouble. AMENTILLE.

**Rich: Treatment of Prolapse of the Bladder.**  
*Northwest Med.*, 1913, v, 38.

By Surg., Gynec. & Obst.

Rich divides treatment of cystocele into two classes: that for the young woman wishing to have

more children, and that for the woman past the climacteric.

For the first class he advises a dissection of the bladder off of the anterior vaginal and uterine walls, then folding the broad ligaments over the uterus under the bladder, then fastening the bladder laterally as high as possible, removing the redundant vaginal wall and uniting it in the center. Or another operation which the author has done four times, namely: opening into the peritoneal cavity between the bladder and uterus, bringing down the round ligaments, and stitching them to the vaginal vault.

For the second class, those in which the tubes and ovaries can be resected, he advises the operation advocated by Watkins of Chicago.

EUGENE CARY.

**Fehling: Treatment of Vesical Weakness in the Female** (Zur Behandlung der Blasenschwäche des Weibes). *Med. Klin.*, 1913, ix, 281.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In a clinical lecture, Fehling discusses the treatment of partial incontinence of the vesical sphincter. Astringent irrigations, introduction of alum glycerine tampons (Fritsch) or zinc glycerine, (5:100) pessaries, especially Schatz's disc pessary with the convexity upwards, are to be recommended in mild cases. The galvanic current up to 30 mamp., using a ball shaped cathode in the anterior vaginal vault near the region of the sphincter with frequent change of the location to avoid burns, and a plate shaped anode over the symphysis, with frequent change of current, was efficacious in some cases. Paraffin injections and vibratory massage were not used by Fehling. Epidural injections according to Cathélin are recommendable. Pituglandol, belladonna, or strychnine are usually not successful. Many of the operations are useless, some even dangerous, as for instance anterior colporrhaphy, excision of an oval piece from the urethro-vaginal septum, excision of an elliptical piece from the bladder, or removal of a portion of the urethra. Albarran's "Raffung" of the urethra and Gersuny's torsion of the urethra do not usually satisfy. The author recommends in cases of a combination of incontinence with vaginal prolapse, an extensive anterior colporrhaphy with invagination of the posterior bladder wall. If this is not successful he advises the interposition of the uterus between bladder and anterior vaginal wall, making door-like vaginal flaps, with invagination of posterior bladder wall, resection of tubes for sterilization, and fixation of the uterus by sutures to the vagina. The urethra now lies entirely on the posterior surface of the uterus. Bladder disturbances were not caused by the vagino-fixation. A urinal must be employed in extremely intractable cases.

KNORR.



# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

**Desgouttes: A Case of Simultaneous Intra- and Extra-Uterine Pregnancy** (Un cas de grossesse tubaire coïncidant avec une grossesse utérine). *Lyon chir.*, 1913, ix, 47.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Owing to the infrequency of such cases, the clinical record is given in detail.

1909, abortion of one month; 1910, normal twin-pregnancy; 1912, last menstrual period in April; in July violent colicky pains, unconsciousness, pallor, small and rapid pulse, discharge of bloody mucus, but no actual hæmorrhage. This was followed by recovery. Eight days later marked hæmorrhage with the discharge of a distinct ovum. As this hæmorrhage persisted, patient was curetted eight days later; this was complicated by pains and slight elevation of temperature. Diagnosis: salpingitis. Therapy: rest, hot douches, ichthyol and glycerin applications. In October of 1912 patient was referred to the author. Examination revealed fair general condition; pallor; pains only on exertion; feeling of weight in the pelvis while sitting, especially towards the rectum; no hæmorrhage but a few bloody fibers in the returned douche-solution. Vaginal examination: uterus anteflexed, lying fixed to the symphysis; to the right of the uterus a large tumor, tender to touch and arching the pouch of Douglas forward. A second examination, eight days later: tumor much enlarged and more tender to touch. Since a distinct ovum was discharged the diagnosis of "graviditas tubaria rupta" was made, but not with much certainty. Laparotomy was advised on account of the rapid growth of the tumor. The ruptured extra-uterine mass, the size of a child's head, was attached to the left ampulla with the adherent tube directed towards the right side. Removal of both tubes and the left ovary was done easily and rapidly. An alarming post-operative abdominal distention, with rapid pulse, was relieved by an enema that caused the passage of much flatus.

Two facts of this history are worthy of special mention: 1. The infrequency of a simultaneous intra- and extra-uterine pregnancy and this patient's tendency to twin pregnancies. Which of these pregnancies was interrupted first? The tubal, as is evidenced by colicky pains, collapse, no external hæmorrhage and, later, the discharge of the ovum with violent external hæmorrhage as a result of uterine stimulation.

2. The acute gastro-enteric flatulency and the marked diaphragmatic distention were alarming. The differential diagnosis between this condition and peritonitis was easy; a simple enema produced

the desired results, making the contemplated gastric lavage unnecessary.

PONFICK.

**Puppel: Repeated Tubal Pregnancy** (Wiederholte Tubargravidität). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 198.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

As a result of his experience in tubal pregnancy, the author has come to the conclusion that adhesions, present before or developing after operation, are the cause of recurrent tubal pregnancy. While operating, he leaves only those tubes which are absolutely healthy. Hirsch has set up a "social indication," i. e., rather than expose a poor woman to repeated tubal pregnancies in the hope of getting a normal one, he removes both tubes at the first operation. Puppel claims that the absolute surgical indications for extirpation are still in question and hence to bring the social standing of the patient into the problem only adds to the complications.

BAYER.

**McGuire: Extra-uterine Pregnancy.** *Trans. South. Surg. & Gynec. Ass.*, Dec., 1912.  
By Surg., Gynec. & Obst.

Five cases were reported in which McGuire had operated a second time for extra-uterine pregnancy. He quoted Richard R. Smith, who tabulates 2998 operations for tubal pregnancy, in which recurrence followed in 113 cases, or 3.8 per cent. He did not believe these figures represented the true frequency of the accident, as he thought it was impossible to follow up such cases accurately over a sufficient period of time to get final results. While he agreed theoretically with the rules laid down by Smith, he did not think they would prove of much service practically, as they left the decision of the question too much to the patient. A woman, just before an operation for ruptured ectopic pregnancy, was in no condition to understand or settle a complicated proposition. If she decided either for or against the removal of both tubes, she would in after life frequently regret the responsibility of the decision, fearing on the one hand a repetition of her former accident, or indulging on the other in morbid longings for a child whose advent she had made impossible. The operator should settle the question for himself, without taking the woman into his confidence, remembering all the time that a surgeon's and a patient's attitude to an operation are often very different, and that their estimate of the desirability of a baby are often very far apart. In deciding the question, the surgeon should try to put the patient in the position of a member of his own family.

E. S. TALBOT, JR.



**Sonnenfeld: Intact Tubal Pregnancy After Extensive Intra-uterine Manipulations** (Intakte Tubargravidität trotz intra-uterinen Eingriffs und wiederholter bimanueller Untersuchungen nebst Bemerkungen zur Diagnose der Tubargravidität). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 179.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports a case of intact tubal pregnancy with continuous hæmorrhage and pain that had been diagnosed as intra-uterine abortion. Rest in bed, hot fomentations, hydrastis, dilatation with palpation and curettage had no effect on the symptoms and only laparotomy revealed the source of hemorrhage—an intact tubal pregnancy. He advises the use of the curette in differential diagnosis as a last aid, provided a laparotomy can be made at once, should the uterus prove to be empty. It is remarkable that the tubal pregnancy was intact after the repeated examinations and surgical procedures.

PONFICK.

**Green: Transfusion in the Treatment of Ruptured Tubal Pregnancy.** *Boston M. & S. J.*, 1913, clxviii, 270.

By Surg., Gynec. & Obst.

Immediate transfusion of human blood in the treatment of ruptured tubal pregnancy has been tested by the author in two cases here reported. In the first case hæmoglobin had decreased to 35 per cent. While the abdomen was being closed after removal of the ruptured tube, the patient was transfused for 25 minutes, obtaining blood estimated at  $1\frac{1}{2}$  pints. Convalescence was uninterrupted.

In the second case the patient was transfused also while the abdominal incision was being repaired. The flow was allowed to continue for 40 minutes. The author's conclusions are as follows:

1. Direct blood transfusion is a surgical procedure of beneficence and value in the immediate treatment of ruptured tubal pregnancy associated with excessive hæmorrhage, and may be employed in such cases as soon as possible after the hæmorrhage is checked, and under the original anæsthesia.

2. Even if the patient's life is not in imminent danger, such transfusion in serious cases at least does no harm, minimizes shock and expedites convalescence.

3. In the technique of transfusion, if the Elsberg cannula be employed, it seems advisable not to apply a clamp proximally to the donor's artery unless the compression of the cannula proves insufficient to control the flow of blood. It also seems advisable not to mobilize the donor's artery completely until the moment when the anastomosis is made, since by this method troublesome hæmorrhage from minute arterial radicles may be avoided.

CAREY CULBERTSON.

**Stange: Concerning Eclampsia** (Zur Eklampsiefrage). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 298.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

On account of the newness of Abderhalden's reaction and the few facts which have been discovered by it, the author reports the results of two cases

of eclampsia in which serum and placenta were examined by Abderhalden's technique of dialysis. The serum in both cases split off the placenta more readily than normally. This, however, does not signify an increased splitting action on the part of eclamptic serum, as the placenta of eclampsia is always more strongly acted on by normal pregnancy serum. The increased ability of splitting off of eclamptic placentas in comparison to pregnancy serum is a remarkable phenomenon and leads the author to the conclusion that the structure of eclamptic placentas, in biochemic and histologic respects, is looser than that of the normal placenta.

HIESS.

**Rissmann: Is Eclampsia Curable by Intralumbal Infusions** (Ist die Eklampsie durch Einspritzungen in den Rückenmarkskanal heilbar)? *Zentralbl. f. Gynäk.*, 1913, xxxvii, 196.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Rissmann assumes that the metabolic products during eclampsia act mainly on the central nervous system and can be reached by local treatment. Intradural injections of 5 cc. of a sterile, 15 per cent MgSO<sub>4</sub> solution act very well. In a case reported, one injection sufficed. Caution is given not to use larger doses.

FROMMER.

**Lutz: Treatment of Eclampsia** (Zur Eklampsiebehandlung). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 204.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author summarizes the following statistics of the Urban (Berlin) Lying-In Hospital from 1909 to 1912: One case of eclampsia in 107 deliveries; 24 per cent of the eclampsia cases occurred during the puerperium. The maternal death-rate was 6.7 per cent as a whole, 9 per cent during the puerperium, 5.9 per cent before and during delivery. The foetal mortality was 32.7 per cent, but excluding the postpartum cases, this rose to 36 per cent. The customary treatment of inducing labor was followed, rather than making a vaginal Cæsarean section. The labors terminated 3 times spontaneously, 17 by forceps, 13 by version and extraction, 3 by perforation and 1 by vaginal Cæsarean section. Venesection and morphine-chloral were freely used. The author advises immediate delivery in severe cases where the pulse is small and rapid, the urine scanty, and coma persists between attacks.

EBELER.

**Uthmöller: Treatment of Eclampsia** (Zur Behandlung der Eklampsie). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 305.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Venesection seems to be the best method of treating eclampsia. The author treated eight severe cases and had only one death. Early delivery is the only procedure that shows a lower death-rate. In six of the cases, all symptoms disappeared after one venesection. France never abandoned venesection in eclampsia, whereas German obstetricians had



discontinued the method, for the small amount of blood they drew off was not sufficient to have a beneficial effect. After delivery of the child, the author advises removing 1000 to 1200 cc. of blood, especially when the blood pressure is high. The first step in the treatment is removal of the products of pregnancy; early delivery, under Stroganoff's narcosis. The author does not agree with Lichtenstein that puerperal-eclampsia is a type of early delivery eclampsia.

GUGGISBERG.

**Rubeska: Normal Pregnancy Serum in Obstinate Vomiting of Pregnancy** (Normales Schwangersenserum bei unstillbarem Erbrechen der Schwangeren). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 307.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Rubeska had a quadripara suffering from hyperemesis gravidarum who had had two normal labors and one therapeutic abortion in the third month on account of obstinate vomiting. He injected on two consecutive days 10 and 20 cc. normal pregnancy serum without any result. The vomiting became worse and pregnancy had to be interrupted.

He had another patient 29 years old who had a spontaneous abortion three years before; the second pregnancy was interrupted during the third month on account of hyperemesis gravidarum. Internal treatment was entirely unsuccessful during the third pregnancy. He injected 40 cc., 2 days later another 40 cc. of normal pregnancy serum into the median vein, and on the following day 55 cc. intravenously and 15 cc. intramuscularly without any success. Therefore this is not a positive remedy for obstinate vomiting of pregnancy.

PENKERT.

**Stolz: Hyperemesis Gravidarum** (Zur Hyperemesis gravidarum). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 90.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The toxins formed during pregnancy act on the already overstrained nervous system of susceptible pregnant women, and cause the typical train of symptoms. The last recourse is termination of the pregnancy, but hypodermic or rectal injections of pantopon, opium, etc., work excellently. Giving such drugs per os causes vomiting before they are absorbed. Large doses of injections should be given at regular intervals — a procedure somewhat analogous to Stroganoff's eclampsia treatment. Rest in bed, diet, regulation of the bowels and free diuresis aid in bringing about a speedy cure without harm to the child.

SCHMID.

**O'Hara: An Interesting Case of Cesarean Section.** *Austral. M. Gaz.*, 1913, xxxiii, 121.

By Surg., Gynec. & Obst.

O'Hara here reports the case of a full-term pregnancy complicated by a hard fibroid of the anterior uterine wall which had become wedged in the pelvic outlet. The growth was about the size of the foetal head and was treated by supravaginal hysterectomy following section for removal of the child. The previous history of the patient was not

uneventful. She had married at 42 years of age, and had been treated ten years previously for excessive menstruation. Four months after marriage she complained of painful, scanty menstruation, and was found to be pregnant, but some form of an abnormal growth was suspected. Five months later she was well advanced in pregnancy and a definite hard tumor was made out. At this time she had much pain, and opiates were required to ward off abortion. The latter months of her pregnancy were uneventful.

CAREY CULBERTSON.

**Carstens: A Third Cesarean Section on the Same Woman.** *Lancet-Clin.*, 1913, cix, 205.

By Surg., Gynec. & Obst.

The author reports the case of Mrs. J. K., who is now 35 years old, on whom he has performed a Cesarean section three times in a period of three years. The second child died twelve hours after delivery, probably from non-closure of the foramen ovale. The woman made a smooth recovery in each case. He uses the ordinary technique in his sections, except that he ruptures the membrane if it is not already ruptured, as he wants the uterus empty of fluid. He discusses the question of sterilizing the woman, and draws the following conclusions:

1. In cases of Cesarean section for bony deformities, with normal pelvic organs and ordinary health, we are not justified in sterilizing the woman.
2. In cases of Cesarean section for eclampsia or placenta prævia we are not justified in sterilizing the woman.
3. In cases of tumors of various kinds, these should be removed at the time of operation, if possible, and the woman not sterilized.
4. In cases of multiple fibroid tumors, where they cannot be enucleated, hysterectomy is indicated.
5. In rare cases, where constitutional conditions such as tuberculosis, etc., exist, sterilization may not only be justified but actually indicated.

C. H. DAVIS.

**Zoeppritz: New Methods of Cesarean Section** (Neuere Kaiserschnittmethoden). *Klin. therap. Wchnschr.* 1913, xx, 141.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Brilliant results of corporeal Cesarean section can be attained if the operation is only executed in completely aseptic cases; nonaseptic cases which have been examined outside of the hospital should not be terminated with the corporeal Cesarean section. Perforation of the living child or, with absolute indication, the Porro operation should take its place. To be able to execute Cesarean section and to extract the living child in suspicious and unclean cases several methods were recommended; Frank's cervical Cesarean section, modified by Latzko-Döderlein, or the establishment of a utero-ventral fistula according to Sellheim. The author further mentions the modifications by Veit and Polano, and the lumbar incision of Solms-Dührssen. All these methods have the disadvantage



that they are not completely safe operations for the mother but favor the child. The prognosis of the cervical Cæsarean section cannot be improved by the perfection of the technique but by the progress of bacteriologic diagnosis which teaches the degree of virulence of the bacterium in the case in question. The cervical Cæsarean section will replace the corporeal one also in clean cases. The advantages of the former are the abolishment of adhesions between uterus and abdominal wall, more favorable scars in the abdominal wall, and firmness of the uterine scar. The disadvantages are the long duration of the operation, higher infant mortality and greater technical difficulties.

FRANK.

**Judd: Cæsarean Section and Porro Cæsarean Operation.** *St. Paul M. J.*, 1913, xv, 70.

By Surg., Gynec. & Obst.

In enumerating the chief indications for the Cæsarean operation we should first consider the contracted and deformed pelvis. It was formerly believed by most obstetricians that Cæsarean section should be chosen as the method of procedure when the true conjugate was 7 cm. or less; but with the added safety of improved technique, it is now generally believed that this method should be chosen if the dimension be 8 cm. or less. It is not so important to determine the exact dimensions as it is to know the disproportion between the pelvic passage and the head of the fœtus which must pass through it. Neoplasms of any of the pelvic viscera which may interfere with the natural labor is also a reason for selecting the Cæsarean operation, since the tumors may be removed at the same time. Various observers believe it to be the safest plan in cases of central placenta prævia and in some cases of eclampsia. If there be a choice of the time to operate, it is best to wait until labor has begun. One of the principal contraindications to the operation is the slightest suspicion of uterine infection. The results of the operation will be less favorable if there have been repeated vaginal examinations or attempts to deliver through the vagina. Uncontrollable hæmorrhage is said to be an indication for removing the uterus. In none of the cases observed in the Mayo clinic was the hæmorrhage severe enough to warrant this procedure. In cases of multiple fibroids, however, coincident removal of the uterus is often advisable. The technique as described by Davis and Markoe has been used in the Mayo clinic most satisfactorily. In the group of 12 cases operated on, the Markoe-Davis method was used in 7, the Säger in 1, and the Porro Cæsarean in 4.

**Baum: Experiences with the Extraperitoneal Cæsarean Section** (Erfahrungen über den extraperitonealen Kaiserschnitt). *Deutsche med. Wchnschr.*, 1913, xxxix, 212.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Report of 100 Cæsarean sections of which 50 were performed extraperitoneally and 50 trans-

peritoneally. Primary union was obtained in 26 transperitoneal and 27 extraperitoneal cases. Delayed healing occurred in 21 cases of each type. Death took place in 3 cases of transperitoneal operation, in 1 extraperitoneal case and in 1 eclamptic, a total mortality of 4 per cent on account of infection, not counting the case of eclampsia.

Conclusions: the extraperitoneal suprasymphyseal section is three times as safe as the transperitoneal. The transperitoneal method shows great superiority in infected cases with foul smelling liquor amnii and fever; 12 cases of extraperitoneal operations resulted in recovery, whereas among the 10 transperitoneal cases 2 deaths occurred. Severely infected cases are therefore not adopted for the method as the extraperitoneal operation cannot be safely executed in all cases without opening the peritoneal cavity, unless the life of the child justifies the 8 per cent maternal mortality. The suprasymphyseal section can only be carried out extraperitoneally in  $\frac{3}{5}$  of the cases. Cases which do not show a fever or infected uterine contents, show the same maternal mortality in extraperitoneal as well as transperitoneal operations—about 2 per cent. Technique: median or transverse incision, the latter in only absolutely clean cases, bladder is pushed to right or left without cutting the lateral vesical ligaments, opening of cervix and lower uterine segment, delivery of child with forceps; during extraction peritoneum is frequently torn. Immediate expression of placenta. Catgut suture of uterus in two layers. Drainage of abdominal wall with glass drain in clean cases with profuse wound secretion; in infected cases the same drainage in conjunction with vaginal iodoform drain. Operation is preferably performed after effacement of cervix but it is not absolutely necessary. Complications: four bladder tears, one vesico-abdominal wall fistula and 9 cases of femoral thrombosis due to injury of pelvic connective tissue. All healed without any serious results. The uterine scar did not cause any disturbance in subsequent deliveries or operations. In one case a third Cæsarean section became necessary which was performed classically as tubal sterilization was deemed advisable. For the benefit of the children the author advises against delaying the operation too long, even if the heart's action is good. Two children were lost on that account. Three other deaths were attributed to lumbar anæsthesia—decrease in heart sounds under 100—due to injection of 5 per cent tropacocaine solution. The suprasymphyseal Cæsarean section is a valuable addition to our obstetric surgery—superior to the classic Cæsarean section and pubiotomy and also induction of premature labor as far as the mother is concerned. DORN.

**Schwartz: Management of Pregnancy and Labor in the Presence of Pelvic Contraction.** *Lancet-Clin.*, 1913, cix, 200.

By Surg., Gynec. & Obst.

The author urges an educational campaign, both among the laity and the profession, to impress upon



them the necessity of medical supervision for all pregnant women, by showing how it prevents many of the gravest complications and permits the early detection of pathological conditions, enabling us to meet them in good time. This work is aided at Washington University by the employment of prenatal nurses, who instruct expectant mothers in the hygiene of pregnancy and have them report to the obstetrical dispensary at stated periods.

Routine pelvic measurements are taken in all cases, and pelves are classified as normal, moderately contracted, or highly contracted. As moderately contracted he classes pelves with a true conjugate of from 8 to 10 cm.; under 8 cm. they are highly contracted. The particular form of contraction is of little practical importance, the question being, is there sufficient space for the safe passage of a viable child.

Cases of moderate pelvic contractions in primiparous women in which the head has failed to enter the pelvis a week before term should enter a hospital and be given the test of labor; if this test fails they should be delivered by pubiotomy.

Cases of moderate pelvic contraction in multiparous women with a record of craniotomy, high forceps, or pubiotomy should enter the hospital six weeks before term and be delivered by artificial premature labor.

Cases of highly contracted pelves should enter the hospital near term and be delivered by Cæsarean section.

In the discussion Davis questioned the advisability of pubiotomy. He stated that he had never performed the operation and that he has never seen a case where it was an easier or safer operation for the mother; that it is not a suitable operation in the presence of sepsis, and that without sepsis the Cæsarean operation is simpler and better.

C. H. DAVIS.

**Cathala: Ovarian Cyst and Pregnancy** (Kyste de l'ovaire et grossesse). *Sem. gynéc.*, 1913, xviii, 17.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In this case the diagnosis of an ovarian cyst wedged in the pouch of Douglas was made during the eighth month of gestation. An operation at term, before the beginning of labor, was decided upon. A living child was delivered by Cæsarean section and the uterus was drained per vagina. Uterine atony was complete and was not relieved until the cyst was excised; this atony the author attributes to the presence of the ovarian cyst wedged in the pouch of Douglas.

PENKERT.

**Ohman: Case of Uterus Bicornis Unicollis with Full Term Pregnancy in Right Cornu** (Ett Fall af uterus bicornis unicollis med fullganget havandeskap i det högrä hornet). *Finska läk.-sällsk. handl., Helsingfors. kapets Handlingar*, 1913, lv, 10.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After a short discussion of the possibilities of a full term pregnancy taking place in a uterus bicornis

unicollis, the author reports the following case: A 22-year-old woman was admitted to the clinic in February, 1912. First menstrual period began at age of 18; since then was regular twice a month until patient became pregnant after her marriage in 1910. In May, 1911, premature labor occurred during seventh month. On February 9, 1912, a hæmorrhage from uterus took place and patient consulted a physician who sent her to the clinic with a diagnosis of extra-uterine pregnancy. Moderate hæmorrhage; pains in small of back and pelvic floor. As the history and the bimanual examination seemed to confirm the diagnosis of extra-uterine pregnancy, a laparotomy was undertaken and it was found that neither an extra- nor intra-uterine pregnancy, but a uterus bicornis unicollis, existed. Abdomen was closed and woman was discharged within ten days. In May, 1912, the author was called to the woman, who complained of severe pains in lower abdomen and some bleeding from the uterus. Last menstruation occurred a short time after discharge from clinic. Bimanual examination revealed a pregnancy in the right cornu of the uterus. On account of the pain and hæmorrhage a threatened abortion was suspected. Patient was put to bed and given tr. opii. After twenty-four hours hæmorrhage and pain ceased. Pregnancy went undisturbed to full term and the woman was admitted to the clinic for delivery. Labor lasted twenty-six hours, probably due to the fact that the left cornu prevented engagement of the head at the inlet. Vaginal examination revealed the left nonpregnant horn at the inlet to left of promontory of sacrum. During course of labor, bag of water appeared externally at the vulva and was artificially ruptured. After rupture of the bag the left cornu receded upward and with three pains, within twenty-nine minutes after rupture, the child was born. Weight, 3750 gm. Author comes to the same conclusions as Richter and others before him, that in cases of uterus bicornis unicollis, pregnancy as well as labor usually terminate spontaneously and that the danger of rupture of the uterus is decidedly rare. We therefore may, according to the author, let the pregnancy take its normal course and await spontaneous delivery rather than resort to premature operative interference.

BJÖRKENHEIM.

**Abramowitsch and Schor: A Case of Hæmorrhage from a Gravid Uterus into the Abdominal Cavity** (Ein Fall von Blutung aus gravidem Uterus in die Bauchhöhle). *Russ. Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 113.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A patient 38 years old, who had been married 14 years, and had 6 labors, with 4 manual removals of placenta, again became pregnant. Labor-like pains suddenly developed and the abdomen became very much distended, the patient dyspnoic, pulse 130. An exploratory puncture of abdomen showed blood. During laparotomy an opening was located in the posterior uterine wall covered with coagulated



blood. The uterus was opened and delivered of a living child. The placenta being firmly adherent, supravaginal hysterectomy was performed, followed by recovery. Pathologic examination; the opening communicated with a large vein. The uterine wall at this place is 0.4 cm. thick, with thin muscular fibers badly degenerated and partly replaced by connective tissue. In the network of fibrin uni- and polynuclear cells rich in chromatin were found. The same cells were seen beneath the endothelium and in the lumen of the vessels. A proliferation of the chorionic epithelium and its penetration through the uterine wall occurred in this case, leading to decrease in thickness and perforation according to Abramowitsch.

GINSBURG.

**Dor and Moiroud: Hematuria During Pregnancy** (Über Hematurie in der Schwangerschaft). *Allg. Wien. med. Zeit.*, 1913, lviii, 60.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient, 5 months pregnant, ill with typhoid fever, suffered with hematuria. A spontaneous abortion occurred and with it a disappearance of any admixture of blood in the urine. The typical hematuria of the pregnant can only occur in women who have never had signs of urogenital disease during the nonpregnant period. The hematuria as a rule appears during the last four months of pregnancy, continues for several days, at times also months, or is intermittent. Besides the bleeding no other symptom of disease of the urinary apparatus exists. The hemorrhage may be of vesical origin due to the formation of varices in the bladder on account of stasis or the special vulnerability of the vesical mucous membrane in consequence of the retention of urine and cystitis. It may be of renal origin, congestion also being the chief causative factor. Diagnosis is positive if all other diseases of the urinary tract can be excluded. The prognosis is favorable for the majority of cases. Treatment: with slight hemorrhages and those of renal origin, rest in bed, lowering of head of bed, antiseptic vesical irrigations to prevent infection. In vesical hemorrhages: ice compresses to the hypogastrium, instillations of adrenalin sol. 1:10,000 or vesical irrigation with boric acid solution followed by instillations of silver nitrate 1:100. Premature delivery is indicated in extensive renal hemorrhages.

GRÜNBAUM.

**Tissier: Therapeutic Abortion and the Law** (L'avortement thérapeutique et la loi). *Arch. mens. d'obst. et de gynec.*, 1913, ii, 52.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After briefly stating the universally acknowledged necessity of therapeutic abortion in certain pathologic conditions of the mother, Tissier emphasizes the fact that by omitting the words, "Without harming the purpose," as per 317 of the 1804 edition of the French "Legal Penalties," the new edition of 1810 and the revised edition of 1832 make every artificially induced abortion punishable. The

physician's gratitude is due to the "intelligent tolerance" of the civic authorities for not insisting on a criminal investigation of each case. Since the law cannot be called upon to protect either the physician or the mother in the justification of an imperative operative interference, Tissier advises that in every case a consultation with several colleagues be held and that a written report be given the authorities, setting forth in detail the necessities for such artificial abortion. Tissier admits that such a procedure is contrary to the law of professional secrecy.

VASSMER.

**Schottländer: Determining the Duration of Pregnancy by a Histological Study of the Placenta** (Über die Bestimmung der Schwangerschaftsdauer auf Grund histologischer Placentarbefunde und über etwaige praktische Verwertbarkeit dieser Befunde). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 193.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Schottländer and Jägersvoss will soon publish a more lengthy paper on the above subject. In this work the tables of Keibel and Mall are used in determining the length of the embryo.

Group 1. One to three months of pregnancy. The main aid in diagnosis is the presence of nucleated erythrocytes. The villi are far apart, the cells of the trophoblast are sharply outlined and have large nuclei, and the syncytium contains much plasma. Up to the sixth week, there are only ichthyoid erythrocytes, from the eighth week "acid" red cells, and by the end of the third month most of the nuclei have disappeared from the erythrocytes.

Group 2. Fourth and fifth months. The villi are closer together and the stroma contains more cells. The trophoblastic cells show fibrinous degeneration and the syncytium is not sharply differentiated. The double epithelium of the chorion disappears in the fifteenth week, and by the seventeenth week the trophoblast cells disappear entirely.

Group 3. Sixth to tenth month. The villi are smaller and more numerous, the intervillous spaces are filled with blood, the trophoblastic trabeculae are less numerous, the stroma of the chorionic villi is fibrillar, and the syncytium contains very little protoplasm. The histological differences between placenta of the eighth and tenth months are not very pronounced—the stroma is harder, the syncytium contains more nuclei and the trabeculae are rarer in the tenth month. These differences can not be detected in placenta that have undergone pathological changes, such as hemorrhage, infarcts or inflammation. These investigations are of aid in determining the duration of pregnancy. BENTHIN.

**Jeanselme: Salvarsan Treatment of Syphilitic Women During Pregnancy** (Du traitement par le salvarsan des femmessyphilitiques en état de gestation). *Ann. de gynec. et d'obst.*, 1913, xl, 27.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Jeanselme reports the cases of 18 luetic pregnant women he treated by salvarsan injections with



favorable results. The full clinical history is given with each case. Sixteen of these women manifested symptoms of secondary syphilis at the time of treatment. The periods of gestation when treatment was begun were as follows: One at 4½ months; three at 5 months; four at 6 months; six at 7 months and two at 8 months. Fourteen of these patients gave birth to living children free from any syphilitic symptoms — one child of 7½ months; six between 8 and 8½ months and seven were 9 months. Four of these children died — one on the 9th day, of scleroma; one on the 17th day, of erysipelas; one on the 79th day, of enteric disease due to faulty nourishment, and one after 4 months, of diarrhoea. It is the opinion of the author that not one of these deaths was due to the syphilitic history. In three cases, the Wassermann test was made of maternal and of infant's blood on the third, twentieth and twenty-seventh day after labor. In three other cases, like comparative tests were made, using the blood taken from the umbilical cord. The author does not present any conclusions from this series, as all the reactions were not typical and not all cases showed the same results in the mother's and her child's blood. There were two cases of still-births — one (of 6 months) died during the time the salvarsan treatment was being given; in the second case (8 months) only one injection of 0.30 g. salvarsan could be given before labor. In both these cases the author believes insufficient treatment to be the cause of death. Labor was normal in all the sixteen cases; there was no hæmorrhage, and the weight of the placenta in comparison with that of the child was in nearly every case greater than normal (1/6). In addition to these sixteen cases, Jeanselme administered the salvarsan treatment to two other pregnant women who, according to his best recollections, had previously aborted and had still-births. Both these cases were syphilitic according to histories and Wassermann tests and both gave birth to living and apparently healthy children. In one of these cases the postpartum Wassermann was negative in both mother and child.

The good results of his salvarsan treatment Jeanselme ascribes to the carefully studied dosage of salvarsan intravenously injected, and regulated according to the exact condition of the patient's general health and especially of the renal functions (albumin). Jeanselme begins with 0.20 g. and after 8 days increases to 0.40 g.—giving 5 or 6 injections in all. If this treatment is given very early in the course of the disease, a second series of injections is given after several months. When albumin appears in the urine, the author decreases the dosage to 0.10 g. per injection.

Excepting uterine colic in some cases and increased foetal movements in others, Jeanselme has never seen any harm resulting from these injections. The author urgently advises this treatment, especially on account of the constantly decreasing birth-rate in France, expecting at least to prevent the loss due to hereditary syphilis. VASSMER.

**Hoehne: Some Important Questions in Gynecology and Obstetrics: Tuberculosis and Pregnancy; Genital, Peritoneal and Uro-Tuberculosis of the Female; Hæmorrhage Late in Pregnancy and Intra Partum, Especially Premature Severing of the Normally Located Placenta and Placenta Prævia** (Über einige aktuelle Fragen der letzten Jahre auf geburtshilflich-gynäkologischem Gebiete; Tuberkulose und Schwangerschaft; Genital-, Peritoneal- und Uro-Tuberkulose des Weibes; Blutungen bei vorgerückter Gravidität und intra partum, insbesondere vorzeitige Lösung der normal sitzenden Placenta und Placenta prævia). *Med. Klin.*, 1913, ix, 23.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

*Tuberculosis and pregnancy.* In regard to inducing an abortion, the author suggests that it is unwise to advocate either extremes. Each case should be carefully watched by the internist as well as by the obstetrician. In severe cases it is probably best to castrate and then send the patient to the sanatorium.

*Tuberculosis and the female urino-genital apparatus.* It is not possible to diagnose tuberculosis of the adnexa for even the tuberculin reaction cannot be relied upon. Tuberculosis of the mucosa of the uterus can be determined by microscopic examination of scrapings or by the biological test. There is always some danger connected with curettage. Carcinoma and genital tuberculosis sometimes coexist. In cases of ascites where tuberculosis is suspected, an incision substantiates the diagnosis and 30 cc. camphorated oil can be poured into the abdominal cavity before closing the incision. In cases of unilateral renal tuberculosis it is best to excise the diseased organ, should the condition of the patient permit such a procedure.

*Premature loosening of the placenta.* Such cases are not very rare, especially when we include partial separation. The prognosis for the mother is not bad, as a rule; but the infant mortality is extremely high. The main etiological factors are the toxicoses of pregnancy whereby the decidua insertionis undergoes changes, and the attachment of the placenta is impaired. The treatment for such cases is induced labor, version, vaginal Cæsarean section or abdominal total extirpation. Every case of placenta prævia should receive active treatment as soon as it is diagnosed or even where it is surmised. The treatment is: rupture of membranes, metreurynter, pituitrin or version of Braxton Hicks (the version especially in case of dead child or non-viable foetus). In severe cases of anemia the best operation is abdominal total extirpation. In some cases hysterotomy vaginalis anterior or the abdominal Cæsarean section is more valuable. HEUCK.

## LABOR AND ITS COMPLICATIONS

**Voll: Painless Deliveries** (Schmerzlose Entbindungen). *München. med. Wchnschr.*, 1913, ix, 300.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

According to the author, it is not advisable to use light anaesthesia during labor, at least not in



private practice, since one must rely upon the co-operation of the woman. He agrees with Jaschke in demanding that the state of consciousness be preserved. Injections of morphine are desirable in order to diminish suffering. The pains occur less frequently but more effectively. The soft structures are better prepared, even the passing of the head can be rendered painless by making an injection of cocaine with adrenalin or suprarenin into the perineum, which is not endangered by this procedure.

BENTHIN.

**Hüffel: Management of Labor in Contracted Pelves** (Zur Geburtsleitung beim engen Becken).

*Fortachr. d. Med.*, 1913, xxxi, 148.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

It is of paramount importance to interfere with spontaneous delivery as little as possible. Induce premature labor only in women who cannot or will not undergo a major operation later. Do not induce labor before the thirty-fourth week or where the conjugate vera is below 7.5 cm. Avoid prophylactic version and use the high forceps rather than perforation. Women with a diagonal conjugate below 10 cm. should be delivered in a hospital. In contractions less than 10 cm., rupture of the membranes often does wonders. Pubiotomy and symphysiotomy have lost adherents through too frequent complications. The best procedure is extra or transperitoneal Cæsarean section, the incision being made low down in the cervix. Use the former combined with drainage in questionable cases. It is impossible to discriminate between slightly infected and contaminated cases. In febrile cases, experience and intuition tell one whether the Porro operation or perforation should be performed.

The author reports a case in which the membranes had ruptured 48 hours before the Cæsarean section was performed. The fluid was turbid and fever had set in. Mother and child did nicely. In a subsequent pregnancy, perform Cæsarean section and remove the tubes. With telephone and automobile communication at everyone's command as at the present time, perforation of a living child is an inexcusable offense. Every pregnant woman should submit herself to a preliminary examination, so that the physician can decide whether the delivery should take place in the home or hospital.

WAGNER.

**Snoo: Rupture of Uterus Occurring at Three Different Times in Same Patient** (Driemaal uterusruptuur by dezelfde vrouw).

*Trans. Nederl. gynaec. Ges.*, 1913, Jan.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Multipara, 41 years old, rachitic pelvis, conj. vera estimated at 7.75; three labors with version and extraction; fourth labor premature and spontaneous, child living. Fifth labor combined cephalic version; violent pain; head proceeds; labor pains cease. Child lies in the abdominal cavity. Extraction by feet. Child 2450 g., dead. Extensive tear in the

lower uterine segment. Tamponade. Compression bandage, convalescence without fever. Sixth labor a year later (1908). Brought to clinic without pains on account of hæmorrhage. Fundus at the costal arch, anterior to it a mass in which parts of foetus are plainly palpable. Sac intact, cervix effaced, child is extracted through the rupture by combined version, is deeply asphyxiated, weighs 2060 g., dies soon. Tamponade, normal puerperium. Seventh labor should have been terminated by Cæsarian section and artificial sterilization, but patient was unexpectedly taken with pains, at home, and could not be brought to clinic. Podalic presentation, hebosteotomy, head delivered with forceps. Child living, 2320 g., normal puerperium. Eighth labor a year later. Cæsarian section and sterilization was to be performed in the 36th week. Two days prior, patient entered hospital, walking, because she had lost some blood. On the way she experienced violent pains. The child was lying to the right of the empty uterus. Forceps were applied to the receding head, child living, 2040 g., a large tear in the right lower uterine segment communicating with the broad ligament, slight hæmorrhage, tamponing of the tear, normal puerperium. Patient should have returned for an artificial sterilization after two months, but she remained away. A permanent enlargement of the pelvis by the hebosteotomy could not be demonstrated.

STRAIZ.

**Skeel: Station of the Presenting Part in Labor.**

*Cleveland M. J.*, 1913, xii, 119.

By Surg., Gynec. & Obst.

By the term "station" the author refers to the level at which the presenting part is found in the parturient canal, following Müller's suggestion and Bacon's paper of 1903. For the sake of accuracy it would seem best to describe the station of the head according to the location of its greatest participating circumference. In vertex cases this would be, of course, the suboccipito-bregmatic; accordingly, when the plane of this circumference coincides with the plane of the inlet, the head is stationed in the inlet. Considered as a passage way for delivery, the parturient tract consists of a curved canal constricted at three levels, with three dilated or dilatable portions. These last sections are the uterine cavity, the pelvic cavity, and the vulvo-vaginal canal, the constricted points being the obstetric pelvic inlet, the obstetric pelvic outlet, and the vulvo-vaginal outlet. Hence there are six principal stations, and any variety of head presentation would be considered as located at a certain station when its greatest participating circumference is at that station. The author regards our customary phraseology, such terms as "fixed head," "engaged head," "head on pelvic floor," etc., as loose and unscientific, whereas the exact station of the presenting part is of importance co-ordinate with presentation and position. The practical application of station, however, comes in best in operative procedures. Thus, Skeel considers forceps rarely indicated with



the head above the pelvic inlet, Station I according to his diagram. At Station II version and Cæsarean section are rarely indicated and forceps extraction is still a serious procedure. At Station III forceps is the only method of delivery likely to be necessary, version or Cæsarean section being out of the question. The author's conclusion is that the exact station should always be carefully considered before deciding the treatment in any case of delayed labor.

CAREY CULBERTSON.

**Westphalen: Lateral Position During Delivery and its Effect on "Endogenous" Infection** (Seitenlage intra partum und "endogene" Infektion). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 280.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

It is possible that the negative pressure in the uterus by delivery in lateral or side position is so great in some cases that air rushes in just after delivery. It is not impossible that such air is contaminated and this might explain some of the cases of "autoinfection" occasionally encountered.

FRANKENSTEIN.

**Gussakoff: A Retrocervical and Extraperitoneal Echinococcus Forming an Obstruction in Labor** (Retrocervicaler extraperitonealer Echinokokkus als Geburtshindernis). *Ärzt-Zeit.*, 1913, xx, 6.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A woman in labor, 29 years old, had a retrocervical tumor which proved an absolute obstruction to the passage of the foetus. The writer performed a posterior colpotomy, during which the capsule of the tumor tore and a clear fluid exuded which contained several vesicles of the size of a hazel-nut. He assumed that these were echinococcus cysts and therefore took great care in removing all the daughter cysts and subsequently tamponing the capsule with xeroform gauze. Labor thereupon proceeded in a natural way by the use of forceps. In the third week of the puerperium it was possible to remove the capsule in its entirety. The patient left the hospital later in perfect health. v. HOLST.

**Zubrzycki: Hæmatoma of the Vulva Occurring During Labor** (Eine während der Geburt entstandene Blutgeschwulst der Vulva). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 274.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

During the course of labor in a multipara a hematoma formed with increasing anæmia of the patient which developed in the left vaginal wall, gradually increased to the size of a man's head, and almost completely closed the vagina. The wall of the tumor, of the thinness of paper, burst during the examination. After evacuation of a large mass of coagulated blood a profuse hæmorrhage occurred. The small fontanelle now presented and forceps delivery was employed on account of asphyxia of the child and increasing anæmia of the patient. The wall of the hematoma was split its entire length, the bleeding vessels were caught and ligated, the cav-

ity was packed with iodoform gauze and the incision partially closed by suturing. Healing was spontaneous. The author advocated expectant treatment in smaller vulvar hematomas, but in larger ones he advises active treatment analogous to his case.

KREBS.

**Baughman: Protection and Repair of the Perineum.** *J. Am. M. Ass.*, 1913, lx, 351.

By Surg., Gynec. & Obst.

The following plan for protection of the perineum in vertex cases was outlined by the author, who had used it in delivering 43 primiparæ, with 3 tears, and in delivering 57 multiparæ, with 2 tears. The cases were delivered in the lithotomy position, hands protected with rubber gloves and parts bathed with sterile pledgets moistened with solution of cresol; the vulva was pushed back from the head during pains and the head flexed with the hand. As soon as the vertex or the bregma passed from under the symphysis the legs were extended and the thighs rotated inward, bringing the buttocks as close together as possible and still leave a place to work. If more stretching tissue were needed, the hand grasped the fleshy part of the buttock and drew it together. In this way more stretching skin and muscles were available.

If the patient should tear in spite of these precautions, then the repair is done at once, if the light is sufficiently good. The plan here adopted is the one outlined by Robins in 1909.

The vaginal sheath is sewed up with a continuous chromicized catgut suture. After the vaginal portion has been united, crown sutures of silkworm gut are passed from the skin surface inward and downward to take in the muscles and fascia. Afterward these are taken up and the skin of the perineum is united with a continuous suture.

**Gisel: The Action of Pantopon and Pituglandol in Obstetrics** (Über die Wirkung von Pantopon und Pituglandol in der Geburtshilfe). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 167.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The combined use of pantopon and pituglandol is of value only during the period of expulsion and not during that of dilatation or in the third stage. With correct use excruciating pains, tetanus of the uterus, or asphyxia of the child are not to be feared. Atony in the third stage must be treated with secacornin.

FRANKENSTEIN.

**Linzenmeier: Pituitary Extracts and Hebostectomy** (Die Bedeutung der hypophysen-präparate für die Hebosteotomie). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 159.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The serious injuries to bladder and vagina, so often seen in pubiotomy followed by forceps delivery, have given rise to the rule, "After hebostectomy await spontaneous delivery." Waiting, however, adds danger to the child. In two such



cases the author made use of injections of pituitary extract and spontaneous deliveries followed within a very short time without lacerations. Pituitrin, pituglandol and cerephysin are all good preparations.

BAUER.

**Stolper: Pituitary Extract in Delayed Labor** (Hypophysenextrakt und Spätgeburt). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 162.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Case 1. A multipara, 27 years old, whose first child was delivered 20 days after term. This pregnancy was 12 days overdue and no pains had developed. The author gave three injections of 1 cc. pituitrin at two-hour intervals and strong contractions set in after the second injection. Normal delivery occurred within five hours of the third injection. Case 2: A multipara 30 years old. The first two deliveries were forceps cases, the third a placenta prævia, and the present pregnancy was fourteen days overdue. She had had some pains but after giving four injections of 1 cc. pituglandol within six hours, the pains became more pronounced and a normal delivery occurred six hours later.

HAPPICH.

**Rudaux: Sudden Death During Parturition** (De la mort subite pendant l'accouchement). *Clinique, Par.*, 1913, viii, 82.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses fully the deaths during labor and enumerates the causes as follows: Rupture of the uterus, hæmorrhage in cases of placenta prævia, premature separation of the normally placed placenta from the endometrium, varices of the vulva or vagina, lacerations of the clitoris, etc; others are non-compensated heart diseases, pathologic conditions of the respiratory organs (as hæmoptysis in pulmonary tuberculosis), brain embolisms, cerebral hæmorrhages, eclampsia and shock. After a sudden death sub partu the child should be removed at once per vias naturales. Cæsarian section is not necessary. The causes of sudden death during the placental stage of labor are, in addition to those mentioned, inversio uteri and vaginal or intra-uterine douches. The same causes are operative in deaths occurring during the first few hours after labor. The deaths resulting from intra-uterine douches are not due to air embolism, in the opinion of the author, as he doubts their occurrence. The author believes the shock incident to marked changes in blood pressure to be the true cause of such deaths.

FRANKENSTEIN.

**Usener: Rupture of the Umbilical Cord** (Über Nabelschnurbruch). *Jahrb. f. Kinderheilk.*, 1913, lxxvii, 181.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author adds twenty-nine cases collected from the recent literature and two of his own to the 143 collected in 1906. There are two causes for rupture of the umbilicus: 1. Mechanical: (a) A tension

outwards; persistence of the ductus omphalomesentericus (Ahlfeld's theory) — present in one third of the cases; the umbilical cord is abnormally short. (b) An abnormally increased abdominal pressure with dorsal concavity of the vertebral column (Aschoff) — intra-abdominal tumors. 2. True embryonic anomalies (Reichel and Kermauner). Reichel claims that part of the primitive groove behind the cloaca closes in a pathological manner.

A radical operation is advisable in cases of persistent ductus omphalomesentericus. Doubtful cases should be closely watched so that an ileus or gangrene can be operated post haste. The author then considers two cases he operated on, with one cure and one death. Of the other twenty-nine cases, twenty-one were operated on, seventeen successfully.

REBER.

**Reber: Treatment During the Third Period of Labor** (Zur Behandlung der Nachgeburtsperiode). *Cor.-Bl. f. Schweiz. Ärzte*, 1913, xliii, 225.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

There are four methods in use:

- (1). The French (traction on the umbilical cord).
- (2). The Dublin (wait, but keep hand on fundus).
- (3). The Credé (expression after half an hour).
- (4). The Ahlfeld (do nothing until the placenta is free).

The clinic at Bern prefers the Dublin method and only in cases of atonic hæmorrhages is the placenta expressed, in serious cases by the aid of narcosis. If this does not bring the placenta, then manual extraction is resorted to. The Credé method had been used at Bern, and comparing results, Reber finds that manual extraction was necessary in 4.3 per cent of the cases when Credé's method was in vogue, whereas it has dropped to 1.8 per cent with the Dublin method.

The fear that the midwife will be led to massaging the uterus unnecessarily by the latter method is unauthentic.

FRANKENSTEIN.

## PUERPERIUM AND ITS COMPLICATIONS

**Traugott and Goldstrom: Bacteriologic Examination of Vaginal Secretion of Parturient Women and its Prognostic Importance for the Course of the Puerperium** (Über die bakteriologische Untersuchung des Vaginalsekretes Kreissender und seine prognostische Bedeutung für den Verlauf des Wochenbetts). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 225.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The secretions of the lowest vaginal portion of 902 women were examined. The patients entered the hospital in an afebrile condition. Amongst them were women who had already been examined or on whom attempts at delivery had been made before entering the hospital. Those who were delivered spontaneously were exclusively examined per rectum. Labor was spontaneous in 839 cases, manual assistance was rendered in 40 cases of



podalic presentation, instrumental interference was necessary in 23 cases (forceps, version, craniotomy); 308 of the 902 women had streptococci, 514 none. Of the former 10.5 per cent, of the latter 12.45 per cent developed bacteræmia. Therefore it is immaterial for the prognosis of the puerperium of afebrile parturient women whether streptococci are present antipartum or not. The difference between women with non-hemolytic and those with hemolytic streptococci is not an essential one. HERZOG.

**Moran: Obstetrical and Surgical Treatment of Puerperal Eclampsia.** *Surg., Gynec. & Obst.*, 1913, xvi, 219. By Surg., Gynec. & Obst.

The author, in considering how delivery shall be effected in eclampsia by obstetrical and surgical measures, says it must be governed by the condition of the cervix, the frequency of the convulsions, and the depth of the coma. If the cervix is effacing, in the absence of contraindications, forceps or version should be employed. If the cervix is rigid and unfolded, metal or manual divulsion is extremely hazardous, often causing shock, deep cervical tears, hæmorrhage and greater liability to infection. It is in these cases of intact cervixes that vaginal hysterectomy and abdominal Cæsarean section are indicated, and when done primarily they give good results.

Lumbar narcosis, likewise lumbar puncture, Zangmeister's and Edebohl's operations, and amputation of the breasts should have no consideration in the treatment of eclampsia. Venesection is a serviceable measure and its value has been overlooked in recent years.

Chloroform causes acidosis and lesions similar to eclampsia, and for these reasons the author has abandoned its use in obstetrics.

The author advocates immediate delivery, but cautions against haphazard treatment, as the morbidity and mortality are exceedingly high under such conditions. Endeavor to choose the right method of operation in the first instance.

**Commandeur: Suppurative Fibroma of the Broad Ligament in a Case of Puerperal Infection** (Fibrome du ligament large suppure au cours d'une infection puerpérale). *Bull. Soc. d'Obst. et de gynec. de Par.*, 1912, i, 984.

By Journal de Chirurgie.

It appears that fibroids offer a lessened resistance to infection and therefore it would seem that the prognosis would be grave in puerperal infection complicated by uterine fibroid.

At autopsy made by the author on a woman who was delivered at seven months of a macerated foetus, an abscess was found in the posterior part of the capsule of the fibroma which filled the pouch of Douglas. The uterus itself was not much affected and appeared to be in an ordinary state of involution. A left suppurative pyelonephritis was present on the same side on which the fibroma extended into the broad ligament.

The author concluded that if any slight infection should occur in fibroid uteri in other pregnancies, he would not hesitate to do an early hysterectomy.

L. CHEVRIER.

**Sperling: A Case of Uncontrollable Vomiting with Retroversion of the Puerperal Uterus** (Ein Fall von unstillbarem Erbrechen bei Retroversio uteri puerperalis). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 55.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 23-year-old patient had a spontaneous abortion in the fourth month of pregnancy. During the last three months she had suffered from increasing uncontrollable vomiting, which did not stop after the abortion. Twenty-one days later curettage was performed and hæmorrhage and vomiting then stopped for six days when again the patient began vomiting. The menses then stopped for almost four months when the uncontrollable vomiting again set in, and the patient grew worse and weaker. The parametrium and adnexa were free, the uterus was retroverted and  $1\frac{1}{2}$  cm. shorter than normal, its musculature slack, mobile and not sensitive upon pressure; there was no fever. In another month curettage was performed but no remains of pregnancy were found. The vomiting then stopped completely, the patient being fed per rectum during the first days after the curettage. The uterus was found in anteflexion and the muscle tonus normal.

In this case the slight pathologic changes, retroversion and hyperinvolution of the uterus were the only causes of the uncontrollable vomiting that could be discovered. The author does not agree with the intoxication theory of hyperemesis and considers the condition a reflex process in the sympathetic plexus.

WETZEL.

**Bosse: Hæmorrhages During Late Puerperium** (Blutungen im Spätwochenbett). *Berl. Klin.*, 1913, xxv, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hæmorrhages during the late puerperium have many different etiologic factors. They may be the result of a disturbed regeneration of the mucous membrane and the defective involution of the uterus; they may be caused by retained placental remnants and fibrous polypi. Myomata, carcinomata, sarcomata and chorioneptheliomata may result in late hæmorrhages. After a normal course of the placental period profuse bloody discharges may be induced by thrombi which become detached by too early rising and too active exercise. Hemophilia especially causes dangerous hæmorrhages in the late puerperium, which must be treated by atmocausis if due to diminished innervation of the vessel walls; or by animal and human serum and diphtheria antitoxin in lessened coagulability. Angiosclerosis and syphilitic arteriitis of the uterine vessels, at times, may cause late hæmorrhages, just so chronic metritis, functional disease of ovaries, or of the thyroid gland or hypophysis. Finally a



very early recurrence of menstruation may simulate a hæmorrhage in late puerperium.

EHRENBERG.

**Bacon: What Shall Be Done with Tuberculous Puerperæ and Their Children?** *Illinois M. J.*, 1913, xxiii, 141.  
By Surg., Gynec. & Obst.

Bacon discusses the advisability of therapeutic abortion to better the condition of women suffering from active pulmonary tuberculosis, and divides the procedure into two heads, vital and prophylactic, according to whether the pregnant woman has grown rapidly worse, or whether it may be assumed that the pregnancy will cause a flare-up of the condition. He states that neither of these procedures is at all satisfactory, as in the first instance the women die in from a few weeks to a few months, and in the second the mortality according to Veit is about 43 per cent.

The author believes that abortion is called for in only about 10 per cent of cases. He rather advises proper hygienic care for the gravid woman, allowing her to go to term and then caring for her in the most aseptic way, using all the known precautions to avoid wound infection. Following labor, the patient should have great care for two or three months in order to build her up and give her a chance for life.

This, of course, is not within the range of the poor, and Bacon advocates the building of a lying-in hospital for consumptives, providing for gravidæ and that this be equipped with a well appointed confinement room, a provision for puerperæ, and a well-planned nursery.

EUGENE CARY.

**Kunz: Herpes Zoster in the Puerperium** (Herpes zoster im Wochenbett). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 121.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

An 18-year-old patient developed a typical herpes zoster on the fourth day after delivery. The left nipple region, costal arch and back were involved. On the day previous, the temperature had been 39.3° C. and tenderness was marked in the seventh and eighth interspaces. The temperature went down to 36.8°, pulse 76, but when vesicles developed the low morning temperature would rise to 39.6°, at noon and 38.5° in the evening. Chills occurred on the third day of disease. On the eighteenth day, involution was well advanced and the temperature was normal.

Gynecological herpes zoster is not rare and various instances of the disease are known in obstetrics. Neu describes a lumbo-femoralis zoster concurrent with eclampsia. He thought the toxins should be blamed for it. Other types are: ergotin herpes in a luetic, iris-herpes in a primipara, lip, nose and cheek herpes in the puerperium. Perhaps all are the result of the toxins formed during abnormal metabolism. In the case at hand the causal factor is vague since the history is negative and delivery

normal following pituitrin. The temperature of 39.6° on the third day of disease was caused by the herpes that had begun two days before. MILTNER.

## MISCELLANEOUS

**Henkel: The Biologic Diagnosis of Pregnancy** (Zur biologischen Diagnose der Schwangerschaft). *Arch. f. Gynäk.*, 1913, xcix, 56.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The biologic reaction of Abderhalden for the diagnosis of pregnancy was used in 40 cases at the Women's Clinic in Jena. It gave reliable results in normal as well as in pathologic pregnancies. In one case of extra-uterine pregnancy the reaction cleared up the diagnosis. A minute description of the technique of Abderhalden's reaction is given. The optic reaction is very delicate and requires great skill. It is regarded as positive when a rotation of more than 0.04 occurs. Cloudy and hæmorrhagic fluids should never be used. The method of dialysis is simpler, gives also accurate results but does not allow an opinion of the quantitative difference and the rapidity with which placental albumin is split off. In contradistinction to the reaction of normal puerpera the placenta of an eclamptic was not split off by its own serum; normal pregnancy serum only split off that of eclamptic. The spinal fluid of the eclamptic gave a weaker reaction with normal placenta; with its own placenta, however, a very decided reaction. The bile of the eclamptic gave opposite results from that of the spinal fluid (intense splitting off of normal placenta, no splitting off of the eclamptic placenta). The author points to the possibility of gaining valuable progress with the aid of this reaction in eclampsia and tumor investigation.

NOVAK.

**Piorkowski: Biological Reactions** (Über biologische Reaktionen). *Berl. klin. Wchnschr.*, 1913, I, 323.

The author has used the optical and dialysing method of Abderhalden to diagnose early pregnancy, the earliest being in the third week. He succeeded in making a correct diagnosis in no less than 96 per cent of his cases.

ZINSSER.

**Wolff: Oxidase Reaction in the Placenta** (Oxydase-reaktion in der Placenta). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 173.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The oxidase-reaction of Schultze and Gierke was applied to human placental tissue in various stages of development. Blue granules became visible in frozen sections that had been hardened in formalin, just as soon as the alphanaphthol and dimethyl-phenylendiamin were oxidized to indophenol blue. Great numbers of blue granules were detected in the syncytium, in the cells of Langhans and in the foetal giant-cells. In a few cases the decidua showed granules. The blue granules were rare in luetic placenta, and in placental infarcts. The amount of



oxidizable substance is in an indirect proportion to the amount of fat in the cell.

GRÄFENBERG.

**Abderhalden: Serum Ferments in Pregnancy and in Tumors; Remarks on Lindig's Work** (Über Serumfermentwirkung bei Schwangeren und Tumorkranken; Bemerkungen zu der Arbeit von Paul Lindig). *München. med. Wchnschr.*, 1913, lx, 411. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Abderhalden sharply attacks the modification of his method as suggested by Lindig in the use of dry placental tissue. The powdered placenta contains substances that dialyze and that react with ninhydrin, whereas Abderhalden deems it a prerequisite that the solution of placental substance be insoluble and neutral to ninhydrin. The faulty results of Lindig can be explained in this way. Henkel, Frank, and those working in the Graz clinic have had such invariable success with the author's exact method that Lindig has been convinced that his method is trustworthy.

HIESS.

**Lindig: Serum Ferment Reactions in Pregnancy and in Neoplasms** (Über Serumfermentwirkungen bei Schwangeren und Tumorkranken). *München. med. Wchnschr.*, 1913, lx, 288.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author employs a modification of Abderhalden's technique by using pulverized placenta which can be kept for a long time and enables more exact quantitative work. The dried albumin of tumors, such as cancer, myoma, or dermoids, and of muscle was also used in the fermentation experiments. His results show that a proteolytic ferment is present in women who are pregnant, or who have a tumor in the genital tract, and perhaps also in inflammations which split off the albumin of the placenta, uterus, ovary, or of tumors of the genitalia and in a lesser degree also of muscle.

HAMM.

**Murray: The Immunology of Pregnancy.** *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiii, 87.

By Surg., Gynec. & Obst.

This article is a report of some complement-fixation, lecithin-precipitation and cobra-hæmolysin reactions in normal and toxic pregnancy, with a review of recent literature. The author first calls attention to the two diametrically opposed views: (1) that pregnancy is a "harmonious symbiosis" and (2) that it is an instance of reaction to an antigen. He then calls attention to the marked changes occurring in (1) normal pregnancy which progress steadily until termination and then subside, except for the breasts, whereas, (2) in abnormal pregnancy there are obviously two stages of intoxication, an early one expressed by union or major degrees of emesis and a later stage expressed best by the term "eclampsia." It is regarded as unfortunate that the broad issue of an immunity reaction in pregnancy is obscured by that of anaphylaxis, this latter condition in itself being a phase in the development of an immunity. The idea of eclampsia as an anaphylaxis in pregnancy is undoubtedly tak-

ing more and more hold on scientific opinion as is witnessed in Bar and Commandeur's recent review. Murray, however, does not accept this idea in full, claiming that eclampsia in the human is a convulsive disease, while true anaphylaxis with convulsions has not been described, and denying that the lesion produced is common to both. The evidence for and against an immunity reaction in pregnancy to the contents of the uterus is discussed under these headings:

#### I. SENSITIZATION REACTIONS

Attention is called to the fact that a sensitization to species is all that can occur and hence all work in this direction must be strictly limited to the injection of homologous material. From the investigations of Thies and Lockemann, whose results were later confirmed by Mosbacher, there is some evidence that pregnant animals are already sensitized to some element in homologous foetal serum and that non-pregnant animals can be sensitized to it. The suggestion, then, is here made that foetal serum sensitizes the mother by virtue of a small fraction of placental antigen which has reached it from the umbilical vessels, but a fraction so small as to be insufficient in the quantity of serum available to produce anaphylaxis when given a second dose.

#### II. EPIPHAN REACTIONS

1. *Complement fixation reactions.* Fieux and Mauriac used an antigen prepared from the villi of a two-months pregnancy in which abortion had been induced for intractable vomiting, and claimed to have demonstrated between the second and fourth months of pregnancy a specific antibody for young chorionic villi. Murray has worked with antigen prepared in three different ways and his results show considerable variation due most probably to the method of preparation.

2. *Diffusion reactions.* The author here reviews the work of Weichardt and Mosbacher. The diffusimeter (toxin-antitoxin) results were best marked towards the end of pregnancy. This, correlated with the sensitization tests (antigen-antibody), which proved more successful in early pregnancy, might appear as a basis for explaining the phase-character of the toxæmias seen in gestation. These experiments would indicate a resistance to syncytium which may comprise not only a neutralization (by antitoxin) of diffused products of that tissue, but also a direct attack (by lysis). This is readily comparable to the process occurring in most bacterial infections.

3. *Precipitin reactions.* Lemaire and Laffont could detect no quantitative difference between pregnancy and the non-pregnant condition, and Murray's results were likewise negative in sixteen tests, using both normal and eclamptic liquor amnii.

4. *Polarimetric reactions.*

5. *Dialytic reactions.* Abderhalden's now well-known results are reviewed here, to which Murray has none to add.



## III. THERAPEUTIC INOCULATIONS

Meyer's and Freund's results in the treatment of hyperemesis and eclampsia by injection of normal pregnancy serum and horse serum are noted.

## IV. REACTIONS NOT DEFINITELY IMMUNOLOGICAL

Under this heading the author discusses:

1. The antitryptic power of pregnant serum, increased during the first half of gestation.

2. Lipoid reactions in pregnancy, an increase except in the early weeks, and a characteristic cholesterin reaction by the end of the third month.

3. Wassermann reactions in eclampsia, positive in all at some stage according to Gross and Bunzel but negative with Alsberg, Thomsen and Heynemann. Murray notes that the Wassermann reaction is caused by lipotropic substances rather than by antibodies and is in no sense comparable to a bacterial complement fixation test.

4. Cobra venom reaction in pregnancy. The author here recapitulates the position taken in previous papers wherein eclampsia and venom poisoning are compared. He again minutely describes the massive focal necrosis at the periphery of the liver lobules as the characteristic lesion in eclampsia and regards cerebral hæmorrhage as an almost constant factor in fatality. Such lesions, he argues, can be produced only by (a) hæmolysis (cytolysis), generally admitted; (b) hæmagglutination, found by Murray as distinct from fibrinous thrombosis in every case; (c) fibrinous thrombosis, invariably present, secondary to any hæmolytic poisoning; (d) endotheliolysis, best studied in the brain of eclampsia. Murray now claims that a fifth factor must be added, a neurotoxin, of which there is constant clinical evidence.

The argument is next taken up that these five components, aside from in eclampsia, are to be found only in venom poisoning, and the author believes that eventually bio-chemical research should succeed in extracting a single definite body of this nature from the eclamptic placenta. In addition to being an antigen cobra venom shows a peculiarly strong action as an amboceptor and hence Murray's experiments are not classified as complement fixation tests. In his work, the serum was not inactivated as was the case in the investigations of von Graff and Roemer. In normal pregnancy positive results were obtained in primiparæ in eighty per cent, in multiparæ in sixty-six per cent. In seven cases of eclampsia the reaction was positive but twice, one case of impending eclampsia was negative and two of severe albuminuria of pregnancy without pre-eclamptic symptoms were positive. The author does not regard this reaction as either a specific or an essential one. CAREY CULBERTSON.

**Werelius: Do the Parathyroids Functionate in Intra-uterine Life?** *Surg., Gynec. & Obst.*, 1913, xvi, 141.  
By *Surg., Gynec. & Obst.*

Reasoning that in thyroparathyroidectomized pregnant dogs the resulting tetany would be delayed

till post-partum by a compensatory action of the foetal parathyroids, the author selected ten dogs in later stages of pregnancy.

In these, complete thyroparathyroidectomy was performed. Contrary to his expectations, these dogs died in tetany much earlier than non-pregnant dogs. The post-operative life averaged a little over two days. Non-pregnant dogs lived from five to ten days following the operation.

These animals did not die from shock, as for some time subsequent to the operation they did not show the least disturbance. They were, however, soon overpowered by substances ordinarily neutralized by the parathyroids, and much earlier than non-pregnant dogs, on account of the added products from the foetal pups, whose parathyroids probably then did not functionate as they do later in life.

If these glands were active at this early period no extra material would be thrown on the mother, as each set of glands would at least take care of its own pup, and consequently life should not be very much if at all shorter in pregnant than in non-pregnant dogs.

There is no doubt but that the removal in pregnant animals of any organ or sets of organs of an internal secreting function would hasten, and possibly intensify, the symptoms ordinarily associated with such removal unless compensated for by vicarious organic function in the foetal pups.

Heredity as a factor in the etiology of goiter was shown in this series, as in two mothers with goiters all the pups were found with greatly enlarged thyroids. In the foetal pups, the left gland was almost invariably the larger and heavier — just the opposite from the condition in the adult.

**Petermöller: High Pulse as an Indication of Imminent Danger of Embolism; a Case of Embolia Arteriæ Centralis Retinæ** (Hoher Puls ein Hinweis auf die bestehende Gefahr der Embolie. Ein Fall von Embolia arteriæ centralis retinæ). *Frauenarzt*, 1913, xviii, 50.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Four cases of lethal embolism in the puerperium, all of which were delivered surgically, are reported. Extraction, version plus extraction, forceps and Cæsarean section were the methods employed. Only one patient had a temperature as high as 39.4° C. on the second and third day; each of the others pursued an afebrile course. All had a constant pulse rate of 90 to 130. The author considers this latter symptom an important sign of imminent embolism and advocates the use of digitalis to reduce the high pulse. If this latter measure is ineffective the patient should be put to bed, even where no other objective symptoms are present. It is very important that midwives should make a record of the pulse. Petermöller then briefly reports a case of embolism of the arteriæ centralis retinæ. This occurred 5½ months after spontaneous parturition, to which the embolism probably was related in some way. FREUND.



**Damaye: Progressive Paralysis Running a Sub-Acute Course with Relapse During Pregnancy** (Syndrome paralysie générale subaiguë; récidence à l'occasion d'une grossesse). *Arch. internat. d. neurol.*, 1913, xi, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A woman 37 years of age, afflicted with progressive paralysis, enjoyed a two years' remission of all symptoms excepting that her pupillary reflexes did not respond to light. This result was obtained by iodine medication and institutional care. An uncomplicated subsequent pregnancy with normal labor caused a recurrence of the paralysis and death two years later. The author assumes that the brain was able to cope with the syphilitic virus normally, but could not withstand its increased activity during pregnancy.

SEIGE.

**Jung: Puerpera with Roberts' Narrow Pelvis** (Wöchnerin mit querverengtem Robertschen Becken). *Deutsche med. Wchnschr.*, 1913, xxxix, 436.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A multipara of twenty years showed physically an extreme narrowness of the hips. The measurements, taken during an operation, proved that the transverse diameter at the superior strait was 6 cm. This is even smaller than that of the original Roberts' pelvis. The patient was pregnant and pains set in during the eighth month, some time after life had ceased in the uterus. Klein's Cæsarean operation revealed a syphilitic, macerated foetus of 2900 g. The Wassermann was positive and she probably had otitis in early youth.

RUHEMANN.

**Waldstein: Breus' Mole and Retained Gestation Sacs in General** (Über Breussche Molen und retinierte Eier im allgemeinen). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 23.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes a case of Breus' mole in an otherwise healthy woman. A vaginal hæmorrhage occurred 2½ months after the last menses, but vaginal examination showed that the uterus was not enlarged. Two months later, the mole was removed. The embryo had died long before and showed signs of atrophy. It was sectioned serially and studied. Some of the tissues showed post-mortem change and other portions were living up to the time of operation.

In another case where hæmorrhage continued during the fourth to the sixth months, the author removed a mole containing a 6 cm. mummified embryo. A hæmorrhage which had its origin in the placenta had pressed forward to the chorion-amnion layers. Some of the intervillous spaces were filled with blood and the stroma of the villi was partly intact. There were signs of inflammation in both decidua and placenta. The fleshy mole is a gestation sac infiltrated with blood, while the Breus' mole is an aneurismal sac. In the latter, death occurs earlier and preservation is more complete.

The author puts rabbit embryos into Ringer's solution with and without oxygen and rabbit serum.

Examination five to eight days later revealed post-mortem tissue growth of varying degrees, and showed that oxygenated serum was the best preservative. Such conditions are analogous to those found in Breus' moles, the foetus making use of substances from the maternal blood.

PENKERT.

**Chiari: Hereditary Chondrodystrophia Foetalis** (Über familiäre Chondrodystrophia foetalis). *München. med. Wchnschr.*, 1913, lx, 248.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

As a contribution to cases of hereditary occurrence of chondrodystrophia foetalis, of which a number have been reported, Chiari reports two cases from the pathologic institution in Strassburg. The children were stillborn at the end of and at the beginning of the ninth month of pregnancy respectively; they had the same father and the two mothers were sisters. The two mothers were of normal frame and so was the father. The paternal grandfather, however, was a dwarf. The two children showed microscopically and macroscopically the picture of chondrodystrophia foetalis hypoplastica.

SCHMID.

**Mercier: Uterine Nephrophagocytes of the Pregnant Rabbit** (A propos des néphrophagocytes de l'utérus de la lapine gestante). *Compt.-rend. hebdom. d. séance de la soc. de biol.*, 1913, lxxiv, 165.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ancel and Bouin, in 1911, found in the uteri of pregnant rabbits, large cells to which they ascribed characteristics of glandular elements. The internal secretion of these cells were supposed to cause and to qualify the condition of the mammary glands during pregnancy.

Mercier, by injecting carmine into the test rabbits, was able to demonstrate that these cells possess phagocytic and excretory qualities. In accordance with the custom of physiologists, the author named these cells "nephrophagocytes." The author can not credit these cells with having an influence upon the functions of the mammary gland any more than he can hold them responsible for the peritoneal covering of the uterus or the condition of the liver capillaries. His theories are negated also by the fact that secretion appeared in the mammary gland (after an unfruitful coitus?) twenty-two days after coitus in spite of the absence of a foetus, placenta and nephrophagocytes.

STOLZ.

**Loewy: Action of Bürger's Ergotin** (Versuche über die Wirkungen des Bürgerschen Secalysats). *Therap. d. Gegenwart*, 1913, liv, 66.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The preparation of ergot used by Bürger contains besides the active constituents of ergot also from 2.5 to 5 per cent cotarnin hydrochloride. Loewy could not notice any change in the musculature of the blood vessels in the web of a frog's foot, neither after dropping the ergot directly upon the web nor after its injection into the dorsal lymph sac. He



observed a great fluctuation in the blood pressure in rabbits and dogs whenever he injected the ergot subcutaneously. This according to him is due to the fact that the respiration becomes deeper and slower. In cats he always observed a lowering of blood pressure when the preparation was injected intravenously. Furthermore, by means of the oncometer it was found the decrease in the volume of an organ was in proportion to the increased pulsation of the blood vessels. It causes anæsthesia of the musculature of the vessels. Furthermore, experiment with uteri kept alive according to the method of Magnus showed that this ergot preparation has much more effect upon smooth musculature than a dialyzed preparation of ergot of the same concentration without the cotarnin hydrochloride. In a few instances no effect was noticed with pure ergot, while the prepared ergot caused a decided and at times a very strong contraction. Loewy concluded that Bürger's ergotin should be used in preference to the simple preparations of ergot. MORITZ.

**Lumpe: Disinfection of Hands of Midwives** (Zur Händedesinfektion für Hebammen). *Ann. f. d. ges. Hebammenwes.*, 1913, iv, 17.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author warns against inserting in the new rules the method of disinfection of hands as given in the fifth edition of the text-book for Austrian midwives by Piskacek, as they are out of date. Coinciding with Doederlein-Krönig (op. Gyn. 3 ed.) he deems the noninfection and protection of hands against injuries and abrasions more important than disinfection. In place of the worthless maltreating of hands and forearms for 15 minutes with stiff brushes and irritating disinfectants, of which mercuric bichloride is one, the midwife should be compelled to wash her hands with hot water and neutral soap, then with a solution of sublatin 2:1000 and alcohol by using gauze or cotton sponges for the application of same. The mode of rotation of application is important. GRAEUPNER.

**Spaeth: The Effect of Pituitrin on the Child** (Hat das Pituitrin einen nachteiligen Einfluss auf das Kind?). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 165.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The rate of the heart-beat of the child is often retarded after pituitrin injections. This drug acts harmfully in two ways: 1. By too rapid succession of uterine contractions the placenta is continually compressed and the foetal blood is poorly aerated. 2. Pituitrin passes into the foetal circulation, where it exerts a cardio-vascular action.

The author reports a case of breech presentation in which he gave two injections of 0.5 cc. pituitrin within 1¼ hours. After the second injection rhythmic contractions developed with normal intervals and a normal delivery soon followed. The child, however, was asphyxiated, pulsation being very slow and respiration greatly retarded, death ensuing in one-half hour. Autopsy revealed nothing and

the author comes to the conclusion that pituitrin was the toxic agent. WAGNER.

**Gousew: Pituitary Extract in Obstetrics.** *Med. Press & Circ.*, 1913, cxlvi, 149.  
By Surg., Gynec. & Obst.

From an experience in 48 labor cases, of which 25 are reported somewhat in detail, the author makes the following observations:

Pains begin in from two to ten minutes, accompanied by abundant micturition. Pituitary extract stimulates pains better during the second half of pregnancy, especially at its end; it gives good and reliable results in the first stage and acts still better in the stage of expulsion. Anæsthesia, and especially morphine, inhibit the action of the extract. It is more reliable than hot douches and metureuresis for effecting artificial premature labor. It frequently is able to supplant forceps and Kristellar's expression. Pulmonary tuberculosis, diseases of the heart and kidneys, eclampsia, marginal placenta prævia, and premature detachment of the placenta he does not consider contraindications. He relates that cedemata completely vanish in from 8 to 18 hours, while the albumin markedly decreases or disappears from the urine after its use. It hastens the expulsion of the placenta. He observed no injurious effects on mothers or children. In cases of atonic post-partum hæmorrhage the extract gave reliable and permanent results, stimulating strong contractions of the uterus. He asserts that irregular pelves not below the medium degree of contraction are not contraindications to the administration of pituitary extract. N. SPROAT HEANEY.

**Jaeger: The Use of B-Imidazolyläthylamin in Obstetric Practice** (Versuche zur Verwendung des B-Imidazolyläthylamins in der Geburtshilfe). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 265.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports his experience with an ergot derivative as a substitute for ergot. The substance, B-Imidazolyläthylamin is produced from histidin by splitting off carbonic acid. It is a stimulant to smooth muscle and especially to the smooth uterine muscle. The heart is but mildly influenced. The drug was given only to puerperal women in solution of 1-1000 by mouth. The patients stood it well without any untoward side actions. The action is analogous to the extract. Involution was as rapid as with ergot. After-pains were plainly felt. Its use in cases of labor showed its inadaptability in these conditions. The injection is not painful, but each time a mild reactive reddening of the skin occurred at the site of the injection. There was no difference in action between an intramuscular and subcutaneous injection. With a dosage of 1-500=4 mg. there was no influence on contraction. A number of side actions occurred, however, such as congestion of the head, headache, erythema. Even with injections of 6 mg. no influence on contractions took place. It was



possible to produce some uterine contractions with 4 cc.=8 mg. of the substance. The first contraction set in within 3 to 5 minutes as with pituitrin. In two cases a tetanic contraction of the uterus occurred, lasting 5 minutes. In the remaining cases, powerful contractions were obtained; these lasted on an average 1 to 1½ minutes. Intervals amounted to ¼ to ½ minute. Contractions were rhythmic in character. Interval and contraction were almost of the same duration. Its action lasted 1 to 1½ hours, contractions weakened but usually sufficed to end labor. A rise in blood pressure of 20-30 mg.=g. occurred in each instance. The child was not influenced in any way, but the woman did not stand the injection as well. No threatening phenomena were observed, though in addition to the above mentioned symptoms palpitation, vomiting and irritation of the conjunctiva frequently occurred. Only in two out of twenty-five cases were no side actions observed. In the remaining cases they consisted of greater or less intensity. With injections of 4 cc.=8 mg. of the substance a contraction of the cervix was observed in two cases, so that the opening of the os was smaller than at the beginning of the injections. The B-Imidazolyläthylamin will take its place midway between pituitrin and ergot. The observed side actions demand care; in addition, high doses are necessary to secure an expulsive action. There is no objection to its use during the puerperium.

BENTHIN.

**Edgar: The Infant Pulmotor: An Apparatus for Artificial Respiration on Asphyxiated Newly Born Infants.** *Am. J. Obst., N. Y.*, 1913, lxvii, 255.

By Surg., Gynec. &amp; Obst.

Edgar has so modified the Drägen pulmotor that he has evolved an apparatus fitted to the use of combating asphyxia in the new-born. He describes the principles of its action and gives the rules for its operation.

N. SPROAT HEANEY.

**Schlossmann: The Economy in Metabolism of the New-born** (Die Ökonomie im Stoff und Kraftwechsel des Säuglings). *München. med. Wchnschr.*, 1913, lx, 285.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In natural feeding of infants the economy is excellent but in artificial feeding, with provision for the same caloric value, a part of the nutriment is lost because the metabolism of not quite adequate food requires more work on the part of the body. The best form of accumulating energy is the accumulation of fat. It is most economical when the fat can be taken from "human fat," that is the mother-milk. To cause fattening, carbon hydrate is uneconomical. In a normal, naturally fed child there always remains a caloric surplus over the food for work, which is for movement and crying. If this work is prevented (by limiting the movements by tight swaddling), then the caloric surplus is used for fattening. The temper plays a great part; choleric need more provision of energy for over-

work, i. e., crying. From a similar viewpoint the quiet behavior of premature children and the cessation of increase in weight of children with itching eczema must be judged.

FRANKENSTEIN.

**Abels: Genesis and Symptomatology of Intracranial Hæmorrhage in the New-born** (Zur Genese und Symptomatologie intrakranieller Blutungen beim Neugeborenen). *Arch. f. Gynäk.*, 1913, xcix, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.


Abels and Seitz think that stenosis and mechanical influences are the cause of intracranial (supra- and infra-tentorial) hæmorrhages; that, however, pure hæmorrhages of the ventricle (of which two cases came under their observation) are caused by stenosis alone, favored by compression of the skull. This is easily explained in protracted and difficult parturition. As a result of the considerable difference in blood pressure during labor, and the difference between the pressure of the uterine contents and the lesser atmospheric pressure, to those structures outside of the os uteri are exposed, the blood supply is increased and the discharge diminished. Less easily explained are the causes of hæmorrhage in rapid precipitate delivery, where the sutures are wide and easily shifted. These skulls descend a considerable degree with every pain and expose a relatively large surface to the diminished atmospheric counterpressure. The process is similar to that caisson disease in which hæmorrhage occurs through mucous surfaces while here it takes place into the ventricles. The differential diagnosis between tetanus and intracranial hæmorrhage is not quite so simple. The tonic spasms, however, which are easily incited by reflex, the beginning and the degree of the trismus, which symptoms in themselves would point to tetanus, justify the diagnosis "hæmorrhage of the ventricle" when tetanus bacilli are absent; where rigidity of the neck and apisthotonus, is absent. This diagnosis is confirmed if there is simultaneously spasms of the fascialis and oculomotorius nerves.

ELTEN.

**Kosmak: Immediate Treatment of Depressed Fractures of the Skull in the New-Born.**

*Am. J. Obst., N. Y.*, 1913, lxvii, 264.

By Surg., Gynec. &amp; Obst.

Kosmak reports in detail the case histories of three new-borns with depressed fractures of the skull, which he treated successfully by elevation of the depressed fragments early after their discovery. For carrying out his technique he has invented an instrument which consists of a hook  of an inch long, set at right angles to a handle 6 inches long. The hair is clipped over the area, the skin touched with iodine, the hook pushed into the center of the depressed bone until the inner table of the skull is penetrated, when by traction at right angles to the surface the bone is elevated. He urges the necessity for the search for fractures obscured by a large caput.

N. SPROAT HEANEY.



**Krüger: Acute Tetany of the New-born** (Über eine seltene Erkrankung eines Neugeborenen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 58.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author delivered a primipara, aged 33 years, of twins. The first one was born after fifty-seven hours of labor and was macerated. It presented by the breech. The second was somewhat asphyxiated, due to the aspiration of amniotic fluid, but was resuscitated by tracheal catheterization. On the second day, the child developed tonic contractions of the muscles of the trunk and opisthotonus. The elbow and knee were slightly flexed and passive extension was impossible. The skin of the entire body felt like moist pasteboard. The child vomited foul smelling pus and died on the evening of the second day. Streptococci were found in the intestine. The author believes this to be a case of sepsis with meningeal symptoms, the tetany being caused by the absorption of streptococcic toxins from stomach and intestine.

REBER.

**Zubrzycki and Wolfsgruber: Normal Hæmagglutinins in Maternal Milk and Transference to the Child** (Normale Hämagglutinine in der Frauenmilch und ihr Übergang auf das Kind). *Deutsche med. Wchnschr.*, 1913, xxxix, 210.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In these experiments blood was used from women, rabbits, placenta, horses, rats, goats, dogs, pigeons, and guinea pigs. To 1 cc. of increasing dilutions of milk 1 cc. of a 5 per cent blood dilution was added, the mixture shaken and placed in the thermostat at 37° for two hours, then in the ice-chest for twelve hours, after which a reading was made. The experiment showed that hæmagglutinins are present in human milk and the agglutination reaction varies according to the kind of blood the milk is mixed with. The rest of the experiments were performed with rabbit blood. The hæmagglutinins were most abundant during the first few days of puerperium. There is also a difference in the milks of primiparæ and multiparæ. During the first fourteen hours post-partum the amounts of hæmagglutinin were about equal, but from then on they remain longer and in greater amounts in primiparæ than in multiparæ. The normal hæmagglutinins are not influenced by nursing or digestion on the part of the mother. They are not found in the blood of the nursing child up to the fourteenth day after birth. They are either destroyed by the digestive organs of the child or else they are not absorbed.

IBRAHIM.

**Bonnet-Laborderie: Pathogenesis of Sudden Death in Syphilitic New-borns** (Pathogenie de la mort subite immedie des fœtus syphilitiques). *Rev. prat. d'obst. et de gynec.*, 1913, xxi, 1.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

It is not very uncommon to find syphilis in the new-born. They die shortly after birth and no real

anatomic lesion is discoverable. Formerly we were content with ascribing the cause to be general cachexia; and, at present, we are wont to assume that a "specific septicemia" produces such deaths. The heart, brain and spinal cord are seldom affected; but nearly always there is an involvement of the abdominal organs, especially the liver and the spleen. Inexplicable facts remain, viz., why the deaths are so sudden, and why they occur at the moment of birth. Several times obliteration of the vena portæ was found. That such obliterations can cause sudden death was demonstrated experimentally by Bernard.

Obliteration, however, cannot be assumed to occur at the moment of birth, because we know that they are of gradual formation. The author believes he has discovered the cause of the sudden death intra partum. Every fœtus dying as described above, had a specially marked abdominal development. This condition was found in every one of the 8 cases studied by the author. The abnormally developed abdomen is caused by the diseased internal organs, especially by the liver. There is hypertrophy of all glandular organs, which Blanchet describes very characteristically as the "glandular splanchnomegaly of hereditary syphilis." Sometimes ascites causes great abdominal distention. The abdominal walls lose their normal elasticity through all these pathologic conditions. Consequently, the lungs are not capable of inhaling sufficient air and the child dies from lack of oxygen at the crucial moment when oxygen is of greatest importance. Autopsy shows the lung-expansion to have been nil or very limited. Owing to the inability to breathe, cyanosis is produced which gradually changes to pallor. Since abdominal distention is the prime factor, paracentesis is indicated as a probable aid in restoring normal abdominal elasticity. This suggestion was made first by Sfameni. The suggestion is timely and well worth carrying into action, though the prognosis be very dubious.

SIEFART.

**Armarn: Pulsations Observed in the Primitive Cardiac Tube of a Human Embryo in the Second Week.** *Am. J. Obst.*, N. Y., 1913, lxvii, 253.  
By Surg., Gynec. & Obst.

Armarn secured an intact ovum the size of a hazel-nut with well-developed chorionic villi from a woman who aborted six weeks after her last menstrual period. Upon opening the amniotic cavity he observed pulsations in the primitive heart. The embryo was 2.5 mm. long, with a yolk sac the size of a lentil, and corresponded to an embryo described in Kollman's embryology as being 14 days old. The cardiac tube was as large as the head of a pin, and beat 90 times per minute. No differentiation between auricle and ventricle could be noticed. The pulsations were regular and of full intensity for about 15 minutes, and these began to fail and disappeared at the end of the following five minutes.

N. SPROAT HEANEY.



## GENITO-URINARY SURGERY

### KIDNEY AND URETER

**Swan: Tumors of the Kidney.** *Lancet*, Lond., 1913, clxxxiv, 374.  
By Surg., Gynec. & Obst.

The author takes up the subject under the classification of Garceau: (a) Solid tumors of the renal parenchyma: malignant; benign; embryonic; and (b) Tumors of the renal pelvis.

The hypernephromata are by far the most common form of malignant tumor of the kidney, occurring in from 75 to 80 per cent of all renal tumors. Primary carcinoma is a much rarer form of malignant tumor of the kidney than hypernephroma, but probably they do not amount to more than 2 per cent of renal tumors. Sarcoma of the kidney occurs as a primary tumor both in the round and spindle-celled variety. The innocent tumors of the kidney very rarely give rise to symptoms during life unless they attain a large size. Adenoma of a papillary or tubular form are frequently found. Angioma of the kidney is a distinctly rare condition. Lipomata and fibromata of the kidney are rare. The embryonic tumors of the kidney are comparatively rare. Of the tumors of the renal pelvis, the papilloma is the most common. The villus-covered carcinoma may occur as a primary tumor or may be a malignant form of a simple papilloma. The three prominent symptoms of hypernephroma are hæmaturia, pain, and the presence of a renal tumor. Hæmaturia is perhaps the most important symptom, and in the author's experience is more frequently of the nature of a recurring profuse hæmorrhage. Pain in hypernephroma is generally of a dull, aching character, referred to the loin in the renal angle. Hypernephroma is most common between the ages of 50 and 70, and is of comparatively slow growth. The author discusses the value of the cystoscope and the diagnosis. He takes up the differential diagnosis of the various tumor formations in the kidney, and urges strongly the necessity of a thorough cystoscopic examination in these cases. In the treatment of renal growths it must be ascertained (1) that no metastases are present, and (2) that the other kidney is present and functionally active. If the functional tests are satisfactory and there are no metastases, the only treatment that can hold out any prospect of cure is the removal of the affected kidney.

Of 7 cases of hypernephroma, 2 are still quite well, 1 two years and the other 1 year and 8 months after operation; one died from recurrence 2 years and one 6 months after operation; one case is still alive, but a second operation was necessary for recurrence in the lower end of the lumbar incision 3 months after the nephrectomy. Two patients died

before leaving the hospital, one within 24 hours as the direct result of the operation and the other from pneumonia after 15 days. A case of carcinoma of the kidney remains well two years after the operation.

D. C. BALFOUR.

**Barney: The Symptomatology of Renal Tumors: a Study of 74 Cases from the Massachusetts General Hospital.** *Boston M. & S. J.*, 1913, clxviii, 300.  
By Surg., Gynec. & Obst.

The author has studied 74 cases of renal tumors occurring at the Massachusetts General Hospital. The list includes 27 hypernephromata, 7 sarcomata, 7 carcinomata, 3 adenomata, and 1 endothelioma. The remaining 24 are unclassified in the absence of pathological examination.

All but one were in the white race; 43 were males and 31 females; and most of the tumors occurred in the fourth decade.

The duration of symptoms shows a wide range, but in 28 cases they were only of 6 months' duration, and in the large majority they had lasted but a year. In a majority the symptoms were of a general nature, at least at the outset. Loss of weight had occurred in 51. In 46 there were no urinary symptoms aside from hæmaturia. The urine contained pus, blood, albumin or casts in 61; but it may be normal, for at least part of the time, even in the presence of a well-developed tumor. Nausea and vomiting, accompanying renal colic, was noted in 29.

The cardinal symptoms are pain (63 times), tumor (46 times), hæmaturia (39 times). The initial symptom was pain in 25, hæmaturia in 18, tumor in 15. Pain and tumor, and pain and hæmaturia, sounded the alarm in 6 cases each, while hæmaturia and tumor together were seen but once. The only symptom during the course of the disease was pain in 10 cases, tumor in 5, and hæmaturia in 3. Pain and tumor occurred in 22, tumor and hæmaturia in 16, pain and hæmaturia in 15, and tumor and hæmaturia in 3. The pain and hæmaturia do not differ from that seen in other lesions, except that each may, and often does, occur during rest, a point of considerable diagnostic value.

There is no evidence in this series that renal tumors produce a rise of temperature or of blood pressure.

Cystoscopy and ureteral catheterization are of the utmost value, not only as a means of eliminating other conditions, but also for determining the functional ability of the two kidneys. In connection with this the X-ray is of importance for the exclusion of calculus and for the determination, by the aid of injected collargol, of the size, shape, and position of the renal pelvis.



Physical examination showed a tumor in 65 cases. Tenderness is inconstant. In the examination of the abdomen, great stress is laid on the value of having the patient in the position described by Israel, i. e., lying on the sound side, with the thighs flexed, the operator palpating the kidney by bimanual pressure.

Metastatic growths are to be expected in a large number, and sometimes may antedate the appearance of renal symptoms. In 3 cases a left varicocele was noted in connection with a left-sided renal tumor.

As in all other malignant growths, our only hope of good results lies in making an early diagnosis, and, where all else but tumor has been eliminated, in operative exploration of the kidney without delay.

**Diamanti: Hydatid Cysts of the Left Kidney; Nephrectomy; Cure** (*Kyste hydatique du rein gauche; Nephrectomie; Guérison*). *J. d'Urol.*, 1913, iii, 199.  
By Journal de Chirurgie.

The localization of the echinococcus in the kidney is a rare condition. Localization in the pelvis of the kidney is still more rare. The history of the patient, a man 52 years of age, showed many violent crises of acute pain occurring during the last two years, located in the left flank, and ending by the elimination of an ever increasing number of hydatid vesicles. Hæmaturia occurred but once in the last four years. Bimanual palpation could not outline the kidney, either on the right or left side; but on the left, pain was provoked by deep palpation in the costo-lumbar angle. At operation the kidney was shown to be in immediate relation with an enormous pocket, the size of a foetal head, adherent throughout, and fluctuating upon movement. This pocket together with the kidney was removed and the patient recovered.

Examination of the specimen proved it to be a hydatid cyst of the left kidney, which, beginning in the lower pole of the kidney, had involved the entire under surface of the pelvis. Part of the wall had become calcified.  
J. TANTON.

**Rischbieth: Polycystic Disease of Kidneys; Remarkable Persistence of Functions in Two Cases in Adults.** *Lancet*, Lond., 1913, clxxxiv, 450.  
By Surg., Gynec. & Obst.

The authors report two cases of polycystic disease of the kidneys. The first patient attained the age of 26 years without a symptom. He then had an attack of intestinal obstruction of a subacute and partial variety, and on examination a tumor was revealed, which was at first thought by his medical attendant to be a tumor of the descending colon. The tumor was subsequently diagnosed as renal, and on operation proved to be a polycystic kidney, which was removed, although the right kidney was also ascertained at operation to be polycystic. The patient remained in perfect health for 6 years with one polycystic kidney, had no symptoms suggestive of renal disease, was passed for life insurance, and

died from an independent disorder. The second case was a man of 62 years of age suffering from acute colitis, from which he died, and both kidneys were found to be polycystic on post-mortem examination. The author considers the whole subject of polycystic kidney, especially the pathogenesis, and says that the following view is held: The obstruction is due to arrested or maldevelopment of the kidney. The frequent association with other malformations is held to support this view, as well as the fact that hereditary and family cases have been recorded.  
DONALD C. BALFOUR.

**Lecène: A Case of Pyelitis** (*Un cas de leucoplasié du bassinet*). *J. d'Urol.*, 1913, iii, 130.  
By Journal de Chirurgie.

The authentic cases of pyelitis are very rare. This case which Lecène has observed and operated was a young woman of 28 years, who, for nine months following a confinement at term suffered continually from pain in the region of the right kidney, pus being found in the urine. Bimanual palpation revealed a tumor the size of both fists in the right lumbar region; regular, ovoid in shape, of firm consistency, a little tender upon pressure and giving ballotment. Ureteral catheterization proved that the pus was coming from the right kidney and that the excretion of urates and chlorates from this kidney was less than from the left. Surgical intervention showed a much enlarged kidney, enveloped in a mass of perinephritic adhesions and compressed above and behind by the enlarged pelvis. This was the size of an ostrich egg. The ureter was entangled in a mass of adhesions.

Nephrectomy: Macroscopic examination showed a large, boggy kidney, with the parenchyma diminished in amount. The ureter, buried in adhesions, opened into the lower part of the distended pelvis. The musculature of the pelvis was greatly thinned out from pressure. Microscopic examination showed a leucocytic infiltration in the musculature of the pelvis. The stratified cuboidal epithelium of the pelvis was transformed into a stratified pavement type with a basement membrane, pavement cell layers connected by fine filaments and a horny layer. The subjacent tissue was inflamed. The tubes were dilated, filled with leucocytes and infiltrated with numerous lymphocytes. The infection was from the colon bacillus.

In 1896, Halle reported five cases of pyelitis. Leber's case concerned a four-months-old infant who died from panophthalmitis, a chronic inflammatory condition of the kidney pelvis being found.

The general belief that it is the chronic inflammation of the musculature that stimulates the change in epithelium, transforming the normal stratified cuboidal epithelium of the pelvis to the pavement cell type with a horny layer, is insufficient for Lecène, who thinks it is not enough to explain the rarity of these transformations compared with the frequency of inflammation of the pelvis. He would rather think that we are dealing with a congenita



malformation. The case reported by Leber, of a double pyelitis in a child of four months upholds his supposition that it is a congenital defect. Once aroused by the subacute inflammation from the musculature, these embryonic epithelial cells give rise to the cholesteatomatous or to the atypical pavement celled epithelium with a stratum corneum.

J. TANTON.

**Buerger: A New Method of Diagnostivating Renal Tuberculosis.** *Am. J. Surg.*, 1913, xxvii, 55.  
By Surg., Gynec. & Obst.

In cases of suspected renal tuberculosis where tubercle bacilli are absent and neither the microscopic findings nor the cystoscopic examination will suffice to establish a positive diagnosis, a new method is suggested. This consists of the excision, through the author's operating cystoscope, of pieces of oedematous mucous membrane either from the suspected ureteral orifice or from suspicious lesions in the corresponding half of the bladder. Such mucous membrane will be found, on microscopic examination, to contain miliary tubercles.

Experience at the present time with this new method would seem to warrant the following conclusions:

1. It has been shown definitely that the excision of mucous membrane of the ureteric meatus may yield tissue containing miliary tubercles at a time when no positive evidences of tuberculosis of the kidney are at our disposal.

2. Miliary tubercles may be present in such tissues, although the only visual alterations of the mucous membrane are those which appear as oedema, even to the trained eye.

3. Such excised pieces make a positive diagnosis possible when the ureteral catheter fails us, when the guinea pig inoculations are negative, when the urine is perfectly clear, and when the patient is presenting practically no symptoms.

4. Concentration and focalization of the tuberculous process at a ureteric meatus may occur early.

5. Such miliary tubercles may be found in the ureteric ostium, even though the rest of the ureter is almost free from tuberculous change and when the pelvis of the kidney, too, is but slightly affected.

6. Cystoscopic biopsy should be performed on the ureteric orifice of the affected side in all cases of suspected renal tuberculosis where the ocular evidences are sufficient to warrant a suspicion of renal involvement; also whenever tubercle bacilli cannot be demonstrated and whenever positive evidences of the presence of a tuberculous process in the kidney are lacking.

**Hartmann: Pyelo-ureteral Tuberculosis with Integrity of the Kidney and Calices** (Tuberculose pyelo-urétérale avec intégrité du rein et des calices). *Bull. et mem. Soc. de chir. de Par.*, 1913, xxxix, 227.  
By Journal de Chirurgie.

Hartmann remarks that it is exceptional to find lesions in the hylum and ureters with an intact

renal parenchyma. He reports the history of a male patient, 16 years old, on whom he operated in 1910. After febrile attack of grippe, the patient had severe pain in the left ilio-lumbar region. A month later there was a slight hæmaturia and then muddy urine in which tubercle bacilli were found. Two months later a lumbar nephrectomy was performed, the recovery from which was permanent and uneventful.

The lesions present were interesting. The ureter and hylus were rigid and the mucous surface appeared downy. The calices were dilated but the lesions in the hylum stopped abruptly at a line at the level of the calices. Though these were dilated, the mucosa was smooth grey and glistening. They were no tuberculous changes in the kidney. There is one similar observation, a case of Wildbolz's which Hartmann found in the literature.

Tuffier believes the process described by Hartmann to be a beginning tuberculous hydronephrosis. If allowed to continue, Tuffier believes that a hydronephrosis similar to the one he described would have developed.

J. DUMONT.

**Denslow: Kidney Function Tests.** *J. Mo. St. M. Ass.*, 1913, ix, 257.  
By Surg., Gynec. & Obst.

There are three general requirements of a reliable kidney function test:

1. To ascertain not only the presence, but also the functional power, of the other kidney previous to removing a diseased kidney.

2. Before undertaking any operation requiring general anaesthesia on any patient who has suffered long continued urinary obstruction, as from hypertrophied prostate, to determine the functional power of the kidneys.

3. To arrive at the amount of crippling suffered by the kidneys from any disease which may have interfered with their secretory power.

The test, to attain its highest usefulness, should be applicable by one without special training.

The determination of the urea output has been used to serve these purposes, but this is very deficient in that the amount of urea to be excreted in health and disease is largely dependent upon the amount of proteid intake and the amount of tissue destruction due to exercise as well as to disease. Low urea output may mean only a low proteid diet or a lack of exercise. There is no definite amount of urea to be excreted.

The requirements are best served by the phenol-sulphonephthalein test of Rowntree and Geraghty, in which a known quantity of the drug has been injected intramuscularly or intravenously, and a normal time of appearance in the urine and a normal rapidity of excretion has been worked out, which is in no way dependent upon the quantity of urine excreted.

The time of appearance by the intramuscular method varies from five to ten minutes and is thought by the author to be largely dependent upon the rapidity of absorption from the tissues, which



may vary with the general state of the body. From 40 to 65 per cent is normally excreted in the first hour, and 20 to 25 per cent in the second hour. The results of the intravenous injection are probably more indicative of the kidney function proper, as the question of the rapidity of tissue absorption does not enter into it. Then it normally appears in from three to five minutes, and from 35 to 45 per cent is eliminated in the first 15 minutes and from 50 to 65 per cent in the first half hour.

However, disadvantages are found in the intravenous use of the dye when the ureters are catheterized; as one kidney may suffer catheter inhibition in the first 15 minutes and thus give a very faulty return, when in the course of an hour it should have corrected itself.

The result is computed by alkalizing the hour's output, diluting it with water up to 1000 cc., and comparing it with a standard solution made by diluting the same amount of phthalein injected with 1000 cc. of water. This may be done either with the Hellige or Dunning colorimeter, or by using the following simple method: Two small cylinders of glass of equal capacity, diameter and density are used, into one of which is put 5 cc. of the urine dilution, into the other 5 cc. of the standard solution. Water is then cautiously added to the standard solution to bring down its color to the same density as the diluted urine, when compared before a white background. If it has been necessary to add 5 cc. of water the urine would be of half strength or would be shown to contain 50 per cent of the amount of phenolsulphonaphthalein injected.

The test is valuable only in showing the present excretory power of one or both kidneys, and may change from time to time as the condition of the kidneys or the body as a whole changes. Repeated tests must be made to determine whether the condition is transitory or permanent, unless that point is settled by the diagnosis made from symptoms and the history of the case, which the test has been used to verify.

**Sherwood: The Prevention and Treatment of Ureteral Fistula; with Report of a Recent Case.** *Long Island M. J.*, 1913, vii, 45.

By Surg., Gynec. & Obst.

This paper refers particularly to persistent fistulæ resulting from accident and traumatism in the domain of pelvic and lower abdominal surgery. Although accidental injuries of the ureter are now comparatively infrequent, it seems reasonable to assume that even under the most ideal conditions of knowledge, experience, and improved technique, and in the hands of the most dextrous operators, this unfortunate accident, although theoretically avoidable, will continue to happen in a varying small proportion of cases of pelvic surgery.

The article included a résumé of the anatomy, etiology, and symptoms of this condition, together with a classification of the varieties of ureteral fistulæ, their course, diagnosis, and treatment.

As a prophylactic measure, the author recommends the routine practice of ureteral catheterization as a preliminary to operation in all cases involving deep and extensive pelvic dissection and where, as the result of a laterally displaced cervix, the normal position and relation of the ureter are disturbed. Three methods of treatment are discussed:

1. Uretero-vesical implantation. This is the ideal method of dealing with these cases and the method of natural selection in the absence of renal infection and other contraindications.

2. Nephrectomy. This may be done in the cases in which implantation has failed, when the kidney is the site of a bad infection, and in cases in which the fistulous opening is too high to permit of an anastomosis with the bladder.

3. Maintenance of the fistula. By this is meant the proper provision for continuous drainage, a plan indicated in the cases in which, for any reason, one of the other methods cannot be employed.

In effecting an uretero-vesical implantation, the intra- or transperitoneal route for exposing the ureter is preferable, in the opinion of the author, to the extraperitoneal method, in that it gives much freer access and exposure for necessary manipulation, an advantage of sufficient importance to outweigh the slight danger of peritoneal infection which with proper precaution is of very little moment.

#### BLADDER, URETHRA, AND PENIS

**Chute: The Early Recognition of Tumors of the Bladder.** *Boston M. & S. J.*, 1913, clxviii, 302.

By Surg., Gynec. & Obst.

The author expresses the opinion that since we can remove either a part or the whole of a bladder, we have adequate operative measures at hand for the treatment of these cases; that our only hope for better results lies in the earlier recognition and the application of those measures at a time when the tumor is localized.

There is one striking symptom that most of these cases show; that is, hæmaturia. Not only is bleeding seen in a very large proportion of bladder tumors, but it is seen early. As, however, it is usually painless and ceases under any expectant treatment, there is an unfortunate tendency to underestimate the importance of this sign, and not submit the patient to careful cystoscopic examination at once. The favorable time for operation may thus be lost, since a second bleeding may not occur for months.

The writer feels that every case of hæmaturia should be looked upon as possibly the first sign of a bladder tumor, and should be considered serious until its origin has proved to be unimportant.

The use of the word "benign" as applied to papillomatous bladder growths is deplored. Certain papillary growths that do not infiltrate the bladder wall, or lead to metastases, lead to fatal results through hæmorrhage and secondary gyclonephritis.



Every bladder growth should be looked upon as essentially malignant. A personal case is cited in which the investigation of the first hæmaturia showed a beginning carcinoma, confined to the superficial layers of the bladder; its removal had been followed by freedom from recurrence, more than a year later. It is the writer's belief that the early and careful investigation of all cases of hæmaturia will lead to the recognition of many more bladder tumors at a time when we may expect a definite cure from their excision.

**O'Neil: Observations on Recent Cases of Bladder Tumors at the Massachusetts General Hospital, with Special Reference to Operative Technique.** *Boston M. & S. J.*, 1913, clxviii, 305.  
By Surg., Gynec. & Obst.

This paper deals with 10 cases of tumor of the bladder operated on by the Genito-Urinary Service of the Massachusetts General Hospital during the last year. The oldest patient was 72, the youngest 18; others varied from 39 to 65.

Pathologically, four of these were infiltrating cancer. In two the infiltration was slight, in one the muscular coat was involved, and in the fourth the process was extensive, going beyond the bladder. Three are described as malignant papilloma, there being a moderate infiltration of the pedicle. Two were non-malignant papilloma, and one case previously treated by high frequency cauterization showed chronic inflammation tissue only.

Hæmaturia was or had been present in all cases; in some cases suggestive of bladder origin. In one case the anæmia was so severe as to require a preliminary transfusion; in another an emergency operation was done because of retention due to clots. The diagnosis was made by cystoscopy in all cases.

Suprapubic cystotomy was performed in four cases, all being papillomata with small pedicles not involving the ureteric orifices. We find it of assistance to place three or four sutures in the mucous membrane about the growth, by means of which it may be steadied and lifted into the field. It can then be excised without handling, the resection including all coats of the bladder. This wound is closed with a continuous suture. The bladder is sewed up tight, a wick placed in the prevesical space, and a catheter in the urethra. In two cases there was no leaking; in the third, slight leaking for a few days. In the fourth case, a sinus persisted for several weeks; in this case the bladder had to be reopened for bleeding and a tube introduced.

Transperitoneal cystotomy we regard as the operation of choice in all cases of sessile and infiltrating growth where excision may be attempted or where a ureteral orifice is involved. This was performed five times. In all cases the peritoneum was closed; where the resection was extensive or the ureters reimplemented, suprapubic drainage was employed. The ureter was divided and reimplemented in two cases. In the first of these no ureteral catheter drainage was employed; the new ureteral

orifice became occluded and a ureteral fistula developed. This was successfully closed by a second operation, the ureter being opened near the renal pelvis, a No. 7 ureter catheter passed into the bladder, grasped with a lithotrite, and drawn out through the urethra. This drained for six days. Recovery was uneventful. In the second case the cut end of the ureter was split and sutured into the bladder. The peritoneum was then incised at the bifurcation of the iliac artery, the ureter opened and a No. 6 ureter catheter passed into the bladder and out through the urethra. The catheter drained well and was removed on the sixth day. This patient did well until the twentieth day after operation, when he developed an embolic pneumonia. On account of the greatly reduced size of the bladder the suprapubic sinus closed slowly and was still leaking when he left the hospital. The extensive case of carcinoma was treated by curettage of the growth and cauterization of the base. There were no operative deaths.

**Watson: The Surgical Treatment of Vesical Papilloma and Carcinoma.** *Urol. & Gynec. Rev.*, 1913, xvii, 64.  
By Surg., Gynec. & Obst.

Watson's article is a review of the results of surgical treatment of vesical papilloma and carcinoma of the bladder from the time of Albarran's treatise on the subject till the present day. It presents the results of an analysis of some 1160 cases in which the ordinary suprapubic excision, the partial resection of the bladder — (a) intravesical, (b) transperitoneal — total cystectomy, and the application of the high frequency current of Oudin were employed respectively.

The following conclusions are drawn by the author:

1. That the application of the high frequency current promises to be the most advantageous, as it assuredly is the safest, method of treatment for benign papilloma of the bladder. That it is premature to use the term cure in connection with this treatment, because but three years have elapsed since its introduction, and many recurrences have taken place at longer intervals after the removal of benign tumors by other methods. That this method, practically speaking, always destroys the tumor. That it is not regarded as appropriate for treatment other than palliative, of carcinoma of the bladder. That it has shown the capability of procuring relief from symptoms, however, in a certain number of cases of the latter nature.

2. That the transperitoneal partial resection of the bladder has demonstrated its superiority to either the suprapubic intravesical resection or excision in cases of carcinoma vesicæ. It also appears to be safer than either of the other methods, as well as to yield more permanent results than either of the others.

3. That total cystectomy has never been given the opportunity to show what it can secure in the way of permanent cures, because it has but very



rarely been employed in cases of early carcinoma, but in those only in which the patients were exhausted or already had metastases; because it has been done in a way which exposes it to special dangers from shock and renal infection, which have been hitherto the causes of almost all the deaths, operative and later, that have followed it. The author took this occasion to recapitulate the chiefly important points of the plan which he proposed to use in these cases in 1905, which are as follows:

That the operation be divided into two stages — (1) the diverting of the urinary secretion; (2) the removal of the bladder. That the first step be accomplished by entirely abandoning all forms of ureteral implantation because of its danger from renal infection, and that bilateral preliminary nephrostomy be substituted in its place. That the bladder be removed later, and that the operation be applied only to cases in which the disease is in an early stage of development.

This plan has never been wholly adopted. A few surgeons have divided the operation into two stages, but none have done so by bilateral nephrostomy, which the writer claims is far freer from danger of renal infection than is the other method of accomplishing the diverting of the urine. He believes that if his plan of procedure be adopted in proper cases the mortality of the operation will be greatly reduced and far more permanent results will be obtained. A special apparatus devised by him keeps the patient dry and comfortable and allows an active life.

**Beer: Treatment of Benign Papillomata of the Urinary Bladder with the Oudin High Frequency Current Introduced Through a Catheterizing Cystoscope.** *Med. Rec.*, 1913, lxxxiii, 242. By Surg., Gynec. & Obst.

Experience has shown that benign papillomata are more common than malign in the urinary bladder; also that operative removal of these growths through a suprapubic incision rarely leads to a cure, as recurrence is the rule. On the other hand it has been proven by Nitze and others that removal by means of the operating cystoscope is perfectly feasible, and that the chance of recurrence is much smaller. The operating cystoscope has, however, never become a favorite instrument; not only because it is difficult to use, but also because it is time consuming and complicated. Very few surgeons have succeeded in operating any considerable series of cases successfully with these instruments.

The new and simple method advocated in this paper has been thoroughly tested by more than thirty surgeons, and they have stamped the new method with their approval, both as much simpler than previous methods and much easier on the patient, because examination and treatment are carried on through the same instrument at one and the same time. Moreover, from results obtained up to date, the end results compare very favorably with those obtained by the best previous methods.

The great simplicity of the method puts the treatment in the hands of many more men than it was when the operating cystoscope was the method of choice.

The new method, in use now for three years, consists of the application of the Oudin current to the papilloma, by which means this is rapidly destroyed and subsequently voided in small pieces in the urine. The electrode is introduced through any catheterizing cystoscope and the applications are made at various spots, for 30 seconds at each. The electrode is placed among the villi, and while the current is on gas is seen to develop and pieces of the growth are violently torn off. A spark is seen only when the applicator is superficial. After a few days the second treatment is given, if any more viable growth is seen. At this examination one regularly sees the extent to which the current has acted at the first seance, shown by the necrotic villi, which are now dead white in color. At this time it will also be apparent that a large part of the growth has disappeared, having been voided in the urine.

The treatment is no more painful than an ordinary cystoscopy, and the current causes no pain unless the bladder wall is touched, which should be avoided very carefully. The simplicity of the therapy is such that it is regularly carried out in an ambulatory manner, the patients not being laid up at all.

The following cases should not be treated by this method, but should be operated: (a) All carcinomata; (b) all intolerant cases; (c) those large growths at the neck of the bladder that are traumatized by every introduction of the cystoscope and bleed profusely, thus clouding the media and preventing careful work (at times, even in these, an application of the current near or at the bleeding point will control the bleeding, as the current is a remarkable hæmostatic); (d) those few cases in which the tumor is inaccessible.

For more details, the paper read in Berlin will have to be consulted, as well as the papers by the author referred to therein.

**Binney: The Value of High Frequency Cauterization in the Treatment of Vesical Papillomata.** *Boston M. & S. J.*, 1913, clxviii, 308.

By Surg., Gynec. & Obst.

Although sufficient time has not yet elapsed to establish any claim of permanent cure, the immediate results of treatment by this method are so strikingly good that a comparison with older methods is proper at this time. The technique usually followed is that described in articles by Keyes and Beer.

Compared with suprapubic cystotomy and removal by excision or cautery, which has a mortality of 3 to 14 per cent attended by danger of complications such as hæmorrhage, sepsis, etc., and which is known frequently to be followed by recurrence, high-frequency cauterization has no mortality, is free from danger of serious complications, and appears to



accomplish the removal of papilloma completely and permanently. Only one case showed a relapse out of twenty cases reported by Keyes, Beer, and Buerger, all of which were followed for at least six months. The author has had one case free from recurrence at the end of one year, and four others, followed for shorter periods, also recurrence-free. One of them was a case of multiple papilloma operated on suprapubically four times in four years, and pronounced malignant by the pathologist.

After the last operation eight recurrent papillomata were found, which were removed by high-frequency cauterization, and the patient now has a clean bladder except for a small tuft on the suprapubic scar which has not yet been completely destroyed.

The author reaches the following conclusions:

1. High frequency cauterization is an important addition to our means of attacking vesical papillomata of the non-infiltrating type.
2. It is free from complications or danger if properly applied, with exception of hæmorrhage; this appears, however, to be rarely serious or troublesome.
3. It avoids the danger of multiple recurrences such as occur not infrequently after suprapubic cystotomy.
4. Although the cases so treated are too recent for absolute proof of cure, the results are highly encouraging.

**Bucky and Frank: Operations on the Interior of the Bladder with the Aid of High Frequency Currents** (Über Operationen im Blaseninnern mit Hilfe von Hochfrequenzströmen). *München. med. Wchnschr.*, 1913, lx, 348.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors have attempted to verify the results of Beer on the treatment of tumors of the bladder by the use of high frequency currents and to show the advantages of this method over the old procedure of using the glow snare (glückschlinge). They used alternating currents of high frequency (several millions per second) which like all other electrical currents is transformed into heat according to the ohms resistance, and thus on account of the great resistance in the human body it produces a certain amount of heat without producing any chemical effects on the musculature or nerves. One is able to use strong currents without any subjective signs of irritation. Further advantages are the possibility of employing currents of low tension (for the transformation of a strong current into a warm high tension current stimulates the nerves and forms sparks), and by the choice of electrodes at the site of operation any degree of heat can be applied. Just as the greatest evolution of heat occurs with a conductor of smallest cross-section, so the greatest amount of heat is produced at the punctiform electrode. The more pointed the electrode the greater the surface action. The broader it is the greater the deep effect (pedunculated polyp, deep action,

stem narrowest place, stem shrinks, polyp falls off). Practical application: On the body a wide electrode (up to 200 sq. cm.) should be employed while in the bladder, filled with salt solution to prevent spark formation, a small electrode, passed through the operation cystoscope and brought close to the tumor, is used. Starting with a weak current and increasing to the strongest, one sees first a whitish discoloration, bubble formation in the water, and a crust forming at the point of contact of the spark. Danger of rupture of the bladder is slight. Most serious are the tumors whose narrowest portion is in the bladder wall. Observations are recorded on three cases (multiple papilloma polypi) all of which were cured. The advantages of this mode of treatment are ease of application, painlessness, security against infection, short duration of sittings (1½ to 3 minutes). The authors strongly recommend their new knifelike electrodes.

PEITZSCH.

**Buerger: Ulcer of the Bladder.** *J. Am. M. Ass.*, 1913, lx, 419.  
By Surg., Gynec. & Obst.

The author calls attention to the fact that simple solitary ulcer of the bladder is regarded as a very rare affection and that in all probability it is frequently overlooked in a routine inspection of the bladder with a cystoscope. Such was the case in the two patients who came under his observation. The conclusions that may be drawn from the history and results of treatment in the two reported cases may be summarized as follows:

1. A careful search should be made in all cases of vesical hæmaturia for the presence of simple solitary ulcer of the bladder.
2. Bleeding ulcers may be overlooked if we fail to bring every portion of the superior and posterior wall of the bladder into view.
3. The most striking symptom in the cases under observation was hæmaturia, persisting for more than two years in one of the patients.
4. In the treatment of this condition the fulguration method should be tried, and if this fails mercurial injections should be given in cases of simple ulcer of the superficial variety.

Recent clinical investigations have shown that there is a type of simple ulcer of the bladder which may be termed chronic and callous. Such ulcers should be excised with the author's punch forceps through the operating cystoscope.

**Feiber: Lithotripsy or Lithotomy** (Lithotripsie oder Lithotomie). *München. med. Wchnschr.*, 1913, lx, 242.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author, basing his statements on 900 operations gathered from the literature, advises lithotripsy instead of lithotomy. In only four cases was a suprapubic removal of the stone necessary. The removal of the stone could usually be done at one sitting. More than three were never necessary. In sixteen, a general anæsthesia had to be used. In the remainder, a local anæsthesia of 2 per cent cocaine in the urethra and neck of the bladder



sufficed. The mortality is very small, scarcely a half of 1 percent (4 deaths in 900 operations). There is the additional fact that patients who are afraid of a cutting operation can be persuaded to lithotripsy which seems to them harmless. They can usually go to work on the second day. MUNNICH.

**Bryan: Diverticula of the Bladder; with Report of a Case.** *Am. J. Urol.*, 1913, ix, 72.  
By Surg., Gynec. & Obst.

Diverticula may occur in any of the mucous tubes of the body when by virtue of mural weakness, extraneous traction or distal resistance, the expulsive force and physiologic emptying power are mechanically embarrassed.

Diverticula occur most frequently in the urinary bladder. Developed from a tube the allantois serves a threefold duty — (1) dilatation; (2) obliteration; (3) vascularity.

It is about the base and flanks of the urinary bladder that the muscular bundles are well organized. It is here that the arterial supply to the organ gains entrance. The significance of these two factors is evident. In later life depressions and valleys are formed here and there, which are dilated and ballooned until cavities are formed which may hold any quantity of urine.

Diverticula may be congenital or acquired. Harrison classifies the acquired as (1) intra-uterine (2) obstacles to urination; (3) traumatic. The well-defined contractile muscular pouches are congenital and the mucous extrusions are acquired.

Interstitial changes of the muscular bundles, irregular replacement fibrosis, gives an unevenness of resistance which invites sacculcation. Arteriosclerotic changes in these vesical arteries form inelastic cords about which the mucous membrane may be readily bulged. Acquired diverticula are found frequently about the base of the bladder.

Ulceration and inflammation of the sac bear upon mortality. Muscular diverticula should empty themselves more frequently than the mucous type.

**Diagnosis.** Pielicke calls attention to intestinal upsets. Perthes cites a case in whom diagnosis of renal hæmorrhage was made. Rothschild emphasizes the use of the cystoscope. Harrison suggests the catheter as a guide for diagnosis. Demoulin says strangury is only found where the connection of diverticulum and bladder is wide.

Congenital diverticula are usually lateral or at the apex, rarely anterior. Stone in diverticula may be single or multiple. Cancer and papilloma of diverticula both have been found in bladder pockets. Hernia diverticula are found on frequent occasions.

Diverticula are usually single, but may be of any number. Congenital diverticula are regularly single. Rothschild says the opening of the congenital diverticula into the bladder is usually wide, irregular, round, or oval. Chozoff states that diverticula complicated with infection are dangerous.

**Treatment.** (1) The clean. (2) The infected. From an anatomical standpoint, and for ease of ac-

cess, the writer selects the suprapubic extraperitoneal approach. Englisch states that in certain cases partial resection of the pubic bone is justifiable. Pagenstecher recommends only the sacral route.

**Goroditsch: Pathology and Treatment of Proliferating Vegetative Cystitis of the Neck of the Bladder** (Zur Pathologie und Therapie der Cystitis colli proliferans s. vegetativa). *Ztschr. f. Urol.*, 1913, vii, 81.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In the case reported the above disease developed following a chronic gonorrhœa of the posterior part of the urethra in a man 25 years old. The diagnosis was made by cystoscopy. After cauterizing the growth with a platinum cautery and irrigating the bladder there was marked improvement. The cause of this vegetative growth at the neck of the bladder must be regarded as similar to that of the papillomatous growth at the external orifice caused by the irritation of the gonorrhœal secretions. REHN.

**Pfister: Calculus of the Urethra in Infection with Bilharzia** (Ein Harnröhrenstein bei Bilharziakrankheit). *Ztschr. f. Urol.*, 1913, vii, 97.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Stones in the urethra are not uncommon in bilharzia infections (seven per cent). They are formed either in the upper urinary passages or in the urethra. The author publishes a case of this kind. The stone consisted of urates and uric acid. It was obtained from an Arab boy, 10 years old, who complained of difficulty of micturition and radiating pain. The stone could be felt in the pars pendula. In the urine there were found eggs of the distomum hæmatobium. The stone was examined histologically and showed eggs of the bilharzia. The peripheral layer was made up of crystals of uric acid. The question of whether the stones were formed in the upper passages or in the urethra itself was not determined. KOTZENBERG.

**Ottow: A Primary Urethral Carcinoma of the Fossa Navicularis** (Ein primäres Urethral-carcinom der Fossa navicularis). *Ztschr. f. Urol.*, 1913, vii, 30.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Up to date 57 cases of carcinoma of the urethra are reported in women and 42 in men. The pars cavernosa and the pars membranacea are sites of predilection in men. The author's case is the first originating in the fossa navicularis. The penis of the 69-year-old patient was amputated. After half a year there is no recurrence. OEHLCKER.

**Schley: Dilatation of Tight Urethral Strictures Causing Retention.** *Surg., Gynec. & Obst.*, 1913, xvi, 221.

By Surg., Gynec. & Obst.

Occasionally, even with the aid of the endoscope, it is impossible to pass a filiform through a tight urethral stricture which is causing retention. The injection of oil and the use of cocaine and adrenalin have been of great service, but they must come in



contact with the strictured area. This cannot always be done by merely filling the distal urethra with the material. An endoscope passed to the orifice of the stricture puts the mucosa on the stretch, developing the opening, and if then a blunt pointed round end needle of hypodermic type, about 4 F. diameter, is pressed against or as far in the orifice as extremely gentle pressure will allow, and a few drops of cocaine-adrenalin mixture is introduced, in a few moments it will be possible to insert the needle very appreciably farther in. After it has entered 4 or 5 mm., a No. 5 F. woven ureteral catheter with taper end is substituted and the injections made through this, advancing after each injection. The catheter is smooth, flexible, especially the tip, and takes any irregularities in the stricture well. Ten or fifteen drops of solution are usually abundant. Urine may be drained off in this way or the catheter used as a guide for a urethrotomy. If urethrotomy is not done at the time, it is well to leave one or two filiforms through the stricture, as it will contract down again and retention ensue as before. This procedure has served well for those strictures situated far enough forward to be instrumented from the meatus with accuracy. The stricture may be cut at the time or reserved for dilatation later, as the surgeon prefers. The method, first used by the author seven years ago, is useful in passing some of the more difficult urethral strictures for relief of retention or as a guide in urethrotomy. The relative merits of urethrotomy or dilatation or the retrograde passage of strictures perineal or suprapubic, are still being debated. We have here a non-operative or non-cutting procedure for the passage of certain urethral strictures, many of which can later be dilated up to full size urethræ without difficulty or trauma.

**Lothrop: The Closure of Obstinate Perineal Fistulæ Following Operation for Stricture of Urethra; the Prevention of These Fistulæ.**  
*Boston M. & S. J.*, 1913, clxviii, 188.

By Surg., Gynec. & Obst.

The author divides the lesions which may be followed by obstinate perineal fistulæ into three groups: (1) cases of urinary extravasation; (2) fistulæ after perineal prostatectomy; (3) fistulæ following operation for stricture. He details his method of closure of these persistent fistulæ: Working on the basis that fistula persists as a result of mechanical conditions, the urine following the path of the least resistance, Lothrop first of all removes the obstruction (usually stricture) distal to the fistula, by cutting with the Maisonneuve or Otis urethrotome. Then with a guide through the urethra to the bladder he begins a careful dissection of the fistulous tract, the patient being in the lithotomy position.

This dissection has for its aim the removal in toto of the fistulous tract from skin to urethra. The walls of the tract are to be left reasonably thin, but not so thin as to break under the traction necessarily imposed. When the base of the tract is

reached a ligature is passed around the junction of urethra and tract; for this No. 1 chromicized gut is used. A catheter *à demeure* is left in place and the cut edges of the perineal wound approximated by deep sutures of silkworm gut or silver wire. These are removed after ten days. The after treatment is the same as for any patient wearing a catheter for bladder drainage. The catheter into the bladder is left in place also for ten days. At the end of this time healing should have taken place; however, if a few drops of urine escape, this condition persists only a few days. Sounds are passed after healing has taken place. The author further details two cases in which excellent results were obtained by the above treatment. J. S. EISENSTAEDT.

**Edmunds: An Operation for Hypospadias.** *Lancet*, Lond., 1913, clxxxiv, 447.

By Surg., Gynec. & Obst.

In the operation described, a new urethra is formed out of the prepuce, which in hypospadias is represented by a large hooded flap of tissue on the dorsum of the penis. The prepuce is chiefly vascularized by one or more vessels which enter it on the dorsum of the penis near the middle line. The operation is performed in three stages, which are described in detail with diagrammatic drawings. The operation can be performed at any time after the age of 3, but it is certainly easier when the patient is older, as the parts are larger and simpler to handle. The stages are at intervals of about three months. Chromic catgut is used throughout, and he does not make use of a catheter to prevent the flow of urine over the wound. He has now operated on 5 cases; 2 are completely healed, one has a fistulous opening which remains to be closed, and in 2 the third stage has not yet been attempted.

DONALD C. BALFOUR.

GENITAL ORGANS

**Ashcraft: The Surgical Treatment of Epididymitis.** *Am. Pract.*, 1913, xlvii, 53.

By Surg., Gynec. & Obst.

Epididymitis in its several types is frequently met with. The gonorrheal variety occurs as a complication of urethritis in about 15 per cent of cases. It arises by direct extension from the posterior urethra through the vas deferens, causing miliary abscesses and leaving nodules in the tail of the epididymis resulting in a blocking and thus interfering with the passage of the semen through the vas deferens to the seminal vesicle. Should both sides become involved, sterility usually results. The seminal vesicle and prostate are not infrequently involved.

Medical treatment simply alleviates. A patent canal may only be insured through surgery. The technique employed is:

1. General anæsthesia and iodine preparation.
2. Exposure of epididymis through the usual incision for hydrocele.



3. Multiple puncture of epididymis; rarely an incision is necessary.

4. Express pus from abscesses.

5. Return epididymis within tunica. Take several sutures through the upper portion of tunica and scrotum. Drain the lowermost portion for several days or longer. This reduces fever and pain, diminishes discharge, and often abruptly terminates the attack. Nodules disappear about two months following operation, when semen may be expressed from the previously diseased side. This means a patent canal.

When seminal vesiculitis complicates, vasostomy is done at the same sitting, thus allowing drainage and medication of seminal vesicles. The vas is exposed at a point on the anterior surface of the scrotum near its entrance through the external abdominal ring. A small longitudinal incision is made in it. It is then anchored to the side of the scrotum.

Where prostatic or vesicular abscess complicates, an added perineal section gives effectual drainage.

Relapsing epididymitis is treated by vasostomy and applications to the posterior urethra. Castration is indicated for abscess of testicle. Epididymectomy is practiced for the tubercular variety. The vas should be removed, its edge touched with phenol, and stitched to the side of scrotum. This allows drainage from seminal vesicle. Occasionally castration is indicated, unless bilateral tubercular epididymitis exists, when epididymectomy and erosion should be practiced.

Cases are cited illustrating each type.

**Mark: A New Suprapubic Drainage Apparatus.**  
*J. Am. M. Ass.*, 1913, lx, 514.

By Surg., Gynec. & Obst.

It has been the experience of the author that the various devices for permanent suprapubic drainage heretofore presented to the profession have been inefficient, cumbersome, and uncomfortable. After considerable experimentation along this line he has devised an apparatus which is comfortably borne by the patient and which affords excellent drainage.

It is composed of a colostomy pad through the center of which is placed the short arm of a right-angled German-silver tube of sufficient caliber to afford free drainage. This short arm is divided into two parts fitting into each other by a bevel joint. The distal point is fitted with a shoulder for the attachment of a stiff-walled soft rubber tube which is inserted through the suprapubic wound into the bladder. This tube can be regulated in length so as to just enter the bladder cavity. The long arm of the silver tube lies flush with the outside of the colostomy pad and has a shoulder for the attachment of a tube leading to the leg urinal.

The apparatus is comfortable and can be worn under fairly snug-fitting clothing. It permits of easy cleansing and has the virtue of keeping the patient dry. All in all, it is the most satisfactory appliance for the purpose which the author has used.

**Goldberger: Technique of Suprapubic Prostatectomy** (Zur Technik der Prostatectomia suprapubica).  
*Ztschr. f. Urol.*, 1913, vii, 104.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the method of anesthetizing in prostatectomy and its significance in the result of the operation. Freyer reports 200 cases of prostatectomy with nine deaths, of which six were due to the anæsthetic. Young gives a mortality of 3.8 per cent, of which half were attributed to the anæsthetic. Zuckerkindl, in a mortality of 17 per cent, attributes 70 per cent of the deaths to the anæsthetic. Spinal anæsthesia cannot be used because it cannot be employed with ease in old persons, and besides it is dangerous. The author recommends local anæsthesia and the operative technique of Chevassu: determination of kidney function by determining the urea constant according to Ambard. If the value is above 0.15 the operation is dangerous.

After the usual preparation, the area is anesthetized with a novocaine solution of 1 to 200 (without adrenalin). After the skin incision, 1 cc. is injected into the fascia up to the upper border of the symphysis and the muscle layer is also infiltrated. The bladder is filled with air. The anæsthesia of the prevesical space takes place through the posterior layer of the fascia. Infiltration of the bladder wall, on both sides of the midline, follows, after opening the bladder. The prostate is enucleated after the patient is quickly put to sleep with ethyl chloride. Incision of the mucosa and enucleation are done by means of the nails of the middle and index fingers which are allowed to grow long. The prostatic area is drained and the bladder irrigated with hot water. A catheter is introduced. There were three deaths in 30 operations, none of which were due to renal insufficiency or infection.

KOTZENBERG.

## MISCELLANEOUS

**Polarkov: The Influence of Fasting upon the Sexual Glands of Dogs** (L'influence du jeûne sur le travail des glandes sexuelles du chien). *Compt. rend. hebdom. d. séance d. l. soc. d. biol.*, 1913, lxxiv 141.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Two male dogs were subjected to a three-months period of partial starvation, then were fed to excess. During this time seminal fluid was obtained often by mechanical stimulation. During starvation time the seminal fluid decreased from 10 cm. to 2-1 drops and the number of spermatozoa from 1½ billions to several 100,000—besides showing serious degenerative characteristics. The spermatozoa first lost their motility; next, their tails became twisted and finally there was nothing left but the heads plus fragments of protoplasm. Some double-headed spermatozoa were found. All these changes ceased only after a prolonged period of excessive feeding. In a testicle excised during the period of inanition there were found in the seminiferous tubules many cells of sertoli and spermatocytes but



very few spermatogonia. These observations lead to the question whether, by fasting, a total disappearance of the spermatogonia—hence, a complete castration—could be produced.

Conclusions: 1. By prolonged starvation the weight of the animal experimented upon decreased by  $\frac{1}{2}$  and the activities of the accessory and the true sexual glands dropped to a minimum. 2. Spermatogenesis ceased. 3. Degenerated spermatozooids appeared. STOLZ.

**Walker: Paths of Infection in Genito-Urinary Tuberculosis.** *Lancet*, Lond., 1913, clxxxiv, 435. By Surg., Gynec. & Obst.

The task of tracing the path of a tuberculous invasion is not an easy one, because structures may be shown under the microscope to be absolutely free from signs of tuberculosis and yet, nevertheless, have furnished the path along which the tuberculous invasion has progressed. The author says that tubercle of the testis, like tubercle of any other part of the genito-urinary system, is almost invariably a secondary lesion. Kocher's statistics show that in a series of 451 necropsies on cases of urino-genital tuberculosis, over 80 per cent demonstrated pulmonary lesions. He first considers whether the path of infection is ascending or descending. There are two theories; the first group comprises those who believe that in the majority of cases of genital tuberculosis the disease starts primarily in the testis, and from there ascends along the vas toward the prostate. The other group maintains, on the other hand, that the primary focus is almost invariably in the prostate, and that the testicle is involved only by a secondary descending extension along the cord. The theory of an ascending infection is based on the belief that tubercle bacilli cannot descend the cord in a direction which is opposite to that of the secretions. Enormous discrepancies exist as to the percentage of cases of genital tuberculosis in which the prostate is normal. Salleron states that in 51 cases of tuberculous epididymitis that were examined by him, the prostate and vesicles were affected in but a single instance. Keyes maintains that in every case of tuberculous testicle which he has examined during the last ten years he has been able to find some indication of a pathologic condition in the prostate. Walker's own observations are in accord with those of Keyes. Some indication of the true sequence of events in these cases may be obtained by a careful consideration of the appearance and apparent age of the lesions in the prostate and in the testicle. In all the pathologic specimens which the author has had the opportunity of examining the appearances were such as to suggest that the tuberculous deposits in the prostate were more mature than those in the epididymis. That the tubercle attacks the epididymis before it invades the body of the testis

is a time-honored observation. He thinks the explanations usually given are inadequate to account for so constant a feature as the involvement of the epididymis before the testis. If, however, we accept the hypothesis that the infective agent has reached the testicle not by the blood stream but by traveling down the cord, we have an immediate and satisfactory explanation of the fact that the epididymis is infected previously to the body of the testicle. The epididymis is the first outpost gained by the invasion descending the cord. In every one of his cases the first signs of disease were detected in the lower and not the upper pole of the epididymis. Tuberculous disease of the testicle is analogous to acute infections which are known to have been produced by extension from the urethra. The ordinary type of tuberculous epididymitis has no analogy to the hæmatogenous orchitis of mumps. By a series of experiments carried out personally after the method of Blandini he shows the following facts: (1) Micro-organisms and inanimate granules are rapidly absorbed from the urethra and carried to the testicle. (2) A tuberculous epididymitis may be experimentally obtained by inoculating the urethra after having damaged one of the testicles.

The author then takes up the etiology of tuberculosis of the prostate, which has four possibilities: (1) Infection by the blood stream; (2) extension of the disease by continuity of structure; (3) direct infection per urethram; and (4) infection through the agency of the urine. All of these modes of infection are to be met with, but he lays special emphasis on the importance of the urine as a vehicle of infection. He thinks in a very large number of cases of tuberculous disease of the prostate a primary focus exists in one of the two kidneys, but a certain number of cases of prostatic and vesical tubercle occur in which a careful investigation of the kidney fails to discover the changes that are commonly regarded as characteristic of tuberculous processes. He then considers infection by the urine in the absence of a typical renal tuberculosis, and states that whenever there exists a tuberculous focus in the body there also exists the probability of an abnormal permeability of the kidney, and the occurrence of bacilluria. The author conducted a series of experiments with a view to obtaining further information on the subject of ascending urinary infections in general and the path by which organisms from the bladder may reach the kidney. By their means he was able to satisfy himself that organisms from the urethra can actually reach the kidney without the existence of any obstruction of the urinary flow. He next investigated the path along which the organisms traveled in their journey from the urethra to the upper end of the ureter and found that the connecting link in such cases is the plexus of lymphatics surrounding the ureter.

DONALD C. BALFOUR.



# SURGERY OF THE EYE AND EAR

## EYE

**Nagel, Ibershoff, Bissel, and Stewart** [Symposium]: **Glaucoma.** *J. Ophth., Otol. & Laryngol.*, 1913, xix, 56.  
By Surg., Gynec. & Obst.

### NAGEL: PATHOLOGY OF GLAUCOMA

In this article, the first of a symposium on glaucoma, the author takes up a brief history of the disease, a classification of its forms, the anatomy in the region of the anterior chamber angle, senile changes that influence tension, ciliary staphyloma, and glaucomatous excavation.

Glaucoma is a term used in the broad sense for all those conditions in which the intraocular tension is pathologically increased. Secondary glaucoma, the result of some previous inflammation, from the standpoint of pathogenesis is the most easily explained. It is due to: annular or total posterior synechia; perforation of the cornea with anterior synechia; dislocation of the lens into the anterior chamber; wounds of the lens; operations on the eye; intraocular tumors or hæmorrhage; and aniridia.

Primary glaucoma is usually bilateral, and occurs in an eye that has suffered no previous inflammation. Glaucoma simplex is looked on now more as an atrophy, and gives the worst prognosis for recovery with operative procedures.

The anatomical condition at the angle of the anterior chamber is admirably adapted to filtration. The blood-vessels are reduced to endothelial tubes, and their walls are adherent to the surrounding sclera so that the lumen is kept constantly open. The ligamentum pectinatum is covered with endothelium which is continuous with the cornea and penetrates the lymph spaces of Fontana. According to Leber, the intraocular fluid is produced solely by the ciliary processes by a process of filtration, and the sole factor determining the amount of transuded fluid is a difference of pressure between the blood in the capillaries and the fluid in the eyeball. The greater part of the fluid passes through the pupil into the anterior chamber and out by way of the chamber angle.

There are two chief theories: one that there is an obstruction to the outflow due to changes in the region of the chamber angle, the other the hypersecretion theory, that there is an increase in the secretion due to some nervous irritation. Alterations in the aqueous occur as a factor in the pathogenesis. The association with old age is based on a general or localized vascular sclerosis.

The increase in the size of the lens or the disproportion between the lens and the other contents of the eye is another predisposing factor.

Clinical symptoms explained from a pathological

standpoint are as follows: Rainbow colors are due to an œdema of the cornea; dilated pupil in the beginning is due to pain, later to mechanical shortening of the iris from peripheral synechia; ectropion of the pupillary pigment, quite characteristic in appearance, gives us a clue to the atrophic parts of the iris; rapidly progressing presbyopia is due to the congestion of the ciliary processes.

### IBERSHOFF: OCULAR TENSION, AND ITS RELATION TO BLOOD PRESSURE

In this article the author defines ocular tension, describes the use of the Schiotz tonometer, shows the relation between blood pressure and ocular tension with several cases to illustrate, and discusses the influence of this relation on the treatment indications.

When we speak of intraocular tension we mean relative compressibility or hardness, the resistance of the corneo-scleral envelopes to the intraocular pressure. Variations in intraocular tension usually indicate simply an increase or decrease of the contents of the eyeball, viz., the aqueous, vitreous, and most of all the blood supply. Every increase or decrease in blood pressure results in a corresponding temporary alteration in the ocular pressure. The temporary change is quickly compensated for by the reciprocal alteration in lymph secretion. Prolonged change in the intraocular tension is brought about by the loss of compensation. The rate of secretion depends on and varies with the difference between blood pressure and tension of the eyeball. The specific gravity of the secretion is increased with the blood pressure and inversely with the ocular tension.

If increased blood pressure coexist with glaucoma, the practice of relieving tension either by opening the anterior chamber or by scleral puncture is obviously fallacious, inasmuch as the resulting difference between blood pressure and the eye tension must result in rapid reformation of the ocular fluids of a much higher specific gravity and osmotic coefficient. It would seem advisable that no operative measures be undertaken without previously, at least temporarily, reducing the blood pressure. Only by so doing can we restrict the formation of ocular fluids and reduce their percentage of solids, or guard against explosive hæmorrhages.

### BISSEL: SOME OBSERVATIONS IN GLAUCOMA WITH SCHIOTZ'S TONOMETER.

We have in this article some comments on the importance of accurate tension taking, a technique insuring this accuracy, and some observations taken from 34 cases with reference to the effect of certain therapeutic agents on the intraocular tension.



The author has used only the Schiotz instrument, therefore he can give no comparison with the instruments of other design. He has found that the services of an assistant are essential to the accurate use of this tonometer, so that the eyes of the operator may be directed constantly toward the cornea of the patient. By this means, the eye, which has been anaesthetized with holocaine or alpine, may be protected from injury, as the instrument may be raised in case of movement on the part of the patient. The long arm may also be kept perpendicular and the footplate in the center of the cornea—two important points. When the conditions are perfect the operator signals the assistant, who takes the reading at that instant.

Judging from tests made on cases with ophthalmoplegia, the extrinsic muscles influence the tension but little if any. Galvanic electricity, the negative pole placed on the eye and a current of three to five milliamperes given for eight to ten minutes, will cause a rapid and frequently a great reduction in the tension. In 3 cases of simple glaucoma, injections of 5 per cent sodium citrate either raised the tension or did not change it. Of 5 cases on whom iridectomy had been performed three to nine years previously, but one showed a tension above the normal limits.

#### STEWART: ITS CAUSE AND CURE DEMONSTRATED IN THE LABORATORY.

This is a review of the laboratory work of Martin H. Fisher on ocular tension, with its practical or clinical application in glaucoma.

In a consideration of the relation of the tissues to water, it has been shown that protoplasm under normal circumstances holds nearly a constant amount of water. With changing conditions the amount will vary greatly; a single cell may be made to absorb enough water to burst it. This latter condition is an oedema as truly as any dependent on a circulatory system for its production. Glaucoma is a local oedema, and all its symptoms are referable to increased ocular pressure, which depends upon the abnormally large amount of water held by the eye in this condition. Fisher has demonstrated that the most intense grades of glaucoma can be induced experimentally in the eye in the entire absence of any circulation.

A cause of glaucoma may therefore reside in the eye itself, because through certain changes, depending upon the general state of the system, the colloids absorb an increased amount of water. The eye of any animal will swell by absorbing more water if dropped in a solution of any acid. The presence of any salt in the acid solution markedly decreases the amount of water that the eye will take up. The salts of citrate, tartrate, sulphate, and phosphate of sodium and potassium decrease the tendency to swelling of this type.

Now as to the relief of glaucoma; sodium citrate is best adapted in 4.05 per cent or 5.4 per cent solution, and 5 to 15 drops of this are injected

subconjunctivally. This treatment will rapidly reduce the tension. A detailed report of 10 cases so treated will be found in the *Annals of Ophthalmology*, 1910. The duration of the reduced tension will be from three to six days, sometimes more. To obtain permanent results the proper regulation of diet and hygienic conditions must be taken up, so that the fluids circulating around the eye will again assume their normal character.

EARLE B. FOWLER.

#### Ruhland: Ganglionic Gliomeuroma of the Optic Nerve. *J. Am. M. Ass.*, 1913, lx, 363.

By Surg., Gynec. & Obst.

The case occurred in a girl of eight. Although a history of some eye trouble dated back for at least two years, no physician had seen the case, until, at the age of eight, the child contracted scarlet fever with a rapidly developing exophthalmus.

Upon enucleation of the eye, an oblong, semi-fluctuating, well encapsulated tumor was found to occupy the position of the optic nerve, measuring 3 centimeters in length and 1.5 centimeters in width.

Microscopically the tumor was composed of neuroglial tissue, forced apart by hæmorrhages and oedema which had occurred into it. It also showed typical ganglionic cells and nerve fibers. The eyeball itself showed absolutely no involvement.

This tumor undoubtedly was of congenital origin and represented misplaced nerve tissue. Its growth was characteristically slow until the febrile condition of the scarlet fever with its accompanying hyperemia stimulated the tumor into active growth which, together with the hæmorrhages and oedema, caused its rapidly increasing size.

There was no history of similar tumors among other members of this family or their near relatives.

#### Buchtel: The Treatment of Pulsating Exophthalmos; with Case Report. *Ophth. Rec.*, 1913, xxii, 75.

By Surg., Gynec. & Obst.

Buchtel reports a case of pulsating exophthalmos in a boy eleven years old, who had been struck on the head with a pitchfork. He says although orbital operations have been known for forty years, nevertheless the popular operation and the one most advised has been the tying of the common carotid or the fastening of the common carotid with the internal and external carotid. No one appreciates better than the general surgeon the gravity of this procedure, the mortality being over 10 per cent. He believes custom is the only authority one can find now for doing this operation.

Lansdown, Noyes, Woodward, Szimahowsky, Golwin, Lasaren, Boden, Dollinger, Wiesinger, Sattler, Burghard and Pritchard, and Gifford have all done orbital operations successfully for this condition; some of them being done after the unsuccessful ligation of the carotid. Yet it seems that these operations have not been given sufficient prominence to change the customary method of treatment. The operation is very simple, merely the distal liga-



tion of the veins in the orbit, and the mortality should be almost nil. He was unable to find the details of any of these operations so he describes the operation in detail.

The eyebrow was shaved. General anaesthesia was used. An incision in the eyebrow two inches long was made from a point very near the middle line. The skin flaps were turned up and down. Many dilated superficial veins were cut which required ligature. The angular vein and superficial temporal were both dilated and were cut. The superior ophthalmic formed by the junction of the two radicles above named was followed into the orbit, back as far as possible without damage to the eyeball and ligated with plain catgut. A piece of gauze was placed over the eye and Coover listened with a stethoscope and reported that the bruit was entirely absent. A subcuticular stitch of plain catgut brought the skin surfaces together.

Following the operation considerable oedema of the eyeball developed. The conjunctiva of the lower lid protruded as a definite fold and was punctured on two occasions. Aside from this, the treatment was merely cleansing-boric stupes and washes and argyrol instilled in the eye. The patient was kept in bed a week. He left the hospital in two weeks. On leaving the hospital the exophthalmos was not improved: if there was any change it was greater than before the operation. There was still some oedema of the conjunctiva. This oedema lasted a month in all. A definite thrombus could be palpated in the top of the orbit during this time. It felt like a hard cord extending back as far as the finger could reach.

There was no bruit after the operation and no pulsation. The exophthalmos gradually diminished and three months after the operation there was practically no difference between the two eyes.

The vision as reported by Coover is 20/20, no diplopia, background of eye normal.

Jackson found no abnormality in the background of the eye and a protrusion of only  $6\frac{1}{2}$  mm.

The scar left was a mere line and concealed by the eyebrow so that the closest observation was required to detect it. The boy is well and furthermore he was not subjected to a hazardous operation.

C. G. DARLING.

**Collins: Tumors of Orbit: Plea for Operation.**

*Brit. M. J.*, 1913, i, 380. By Surg., Gynec. & Obst.

The author cites five cases of tumors of the orbit as a plea for operation in these cases, which he thinks are too often deprived of the benefits to be derived from surgery. Four of the cases were sarcoma, one of which was operated on four times in the last five years and is still alive. The operations were radical, consisting of thorough cleansing of the orbital fossa followed by cauterization with zinc chloride and opium paste. One patient died later, evidently from metastases. One was a case of venous cavernous angioma containing phleboliths.

M. S. HENDERSON.

**Thomson: On Aseptic, Antiseptic, and Prophylactic Measures in Ophthalmic Surgery: Observations Made in Various British and Continental Hospitals.** *Glasgow M. J.*, 1913, lxxix, 108. By Surg., Gynec. & Obst.

Thomson visited numerous eye clinics, among them those of Fuchs, Elschnig, Siegrist, Axenfeld, Herbst and Hess, and in a very interesting paper he reviews and comments on the preparation of the field of operation and instruments, the clothing of the surgeon and after-treatment employed by the different men.

The prophylactic examination of the conjunctiva differed greatly. Many operators believe in the rigid carrying out of the Elschnig technique, many more examine a smear, use some ordinary culture media or are guided largely by the appearance of the conjunctiva as to whether the eye is fit for operation or not. Axenfeld thinks pre-operative injection of antipneumococcic serum is of some value in cases where operation must be undertaken in the presence of conjunctival pneumococci. The usual method of preparation of the field consists in rubbing the surrounding skin with benzine on a cotton swab and afterwards washing it with a fluid alcoholic neutral soap made by Güde, then the conjunctival sac is flushed out with a large quantity of normal salt, or in suspected cases with 1:5000 oxycyanide or perchloride of mercury.

Thomson says it has long been held by a considerable number of operators that boiling is destructive of the delicate edges and points of cataract knives, yet he found on the continent that most operators boiled their knives for three minutes in the usual 1 per cent sodium bicarbonate solution. Fuchs insisted on the harmlessness of boiling *unless the temper of the steel is incorrect*. He has had cataract knives which have been boiled for forty operations and were as good as new, some, however, being destroyed by the first boiling. Thomson also mentions the special retractor used by Hess, a sterilizable waterproof tissue being gripped between its two blades. This tissue covers the lid edges at the temporal and nasal sides of the retractor and prevents the accidental contact of the knife with the lid margin, caruncle or skin.

C. G. DARLING.

**Gifford: On the Technique of Evisceration of the Eye-Ball.** *Med. Herald*, 1913, xxxii, 54.

By Surg., Gynec. & Obst.

The author insists on the desirability of doing a simple evisceration rather than an evisceration plus keratectomy. He proceeds as follows: Straight incision through center of cornea extending for  $\frac{3}{4}$  inch into sclera on each side. Then without excising the cornea, scrape out the contents of the globe with a sharp spoon and rub out the interior of the cavity vigorously with a somewhat globular dry swab, paying particular attention both with the spoon and the swab to the ciliary region, and to the entrance of the optic nerve. The cavity is then thoroughly irrigated, and the anterior wall of the



eye is pushed back freely against the posterior wall with one or two good sized gauze swabs dipped in sterile oxide of zinc ointment; compressive bandage. Swab removed after forty-eight hours. The advantage of this procedure is its simplicity: it can be done in case of emergency by a physician without either special training or special eye instruments; moreover, it is followed by less reaction, and it gives a better stump than when the cornea is excised. Special stress is laid upon the pressing back of the anterior wall, as this produces a flat disklike stump which gives specially good support to an artificial eye.

**Cotterill and Mackay: Hæmatoma of Left Orbit Treated by Modified Krönlein's Operation.**  
*Brit. M. J.*, 1913, i, 381. By Surg., Gynec. & Obst.

The patient, a blacksmith aged 38 years, received a sharp blow on the left temple four years ago. No immediate swelling nor trouble occurred. Some months later he noted that when stooping over, he had a feeling as though his left eye popped forward. It seemed to resume its normal position when he assumed the erect posture. In June, 1912, definite symptoms presented, though before this time the same sensation had persisted. Now his left eye and lids protruded and he could not move his eye in any direction. There was partial ptosis of the left upper lid and severe pain going from the left orbit to the back of his head. There was no definite tumor; no pulsation, thrill nor bruit; vision almost normal; fundus negative. It was evident there must be a mass at the orbital apex pushing the contents forward and interfering with the proper innervation of the ocular muscles. Krönlein's operation was decided upon and the operation was performed.

**Operation.** A horseshoe-shaped incision was made at the outer side of the orbit, with its base directed upwards and outwards, the lower limb of the incision being carried backwards along the zygoma. The periosteal capsule of the orbit was detached and pushed inwards with the eye. The orbital margin of the frontal, the malar bone, and the zygoma were divided with a fine saw and chisel, and the bone thrown upwards and outwards with the skin flap. No new growth was palpable, but just inside the periosteum at the back of the orbital cavity a mass was felt which proved to be a hæmatoma. About a tablespoonful of recent clot was carefully removed by scoop and finger; and as nothing more could be felt except some thickening due to the wall of the hæmatoma, the wound was closed with horsehair stitches, and a collodion dressing applied.

**After-history.** Two days later the proptosis was much less obvious, and by the tenth day the wound was completely healed, and the eye apparently normal. On the twenty-fourth day the patient was discharged, and his only complaint was of slight diplopia on looking to the left. Examination five months later: Patient reported himself fit and well. The vision of each eye was equal to 6/9.

There was no protrusion in any direction. The movements of the left eye appeared to be perfectly performed, but he stated that he had slight diplopia on looking to his extreme left, and that he had occasionally slight pain and sensations of stretching about the left temple. He admitted, however, that these were quite trivial and that he was practically cured.

M. S. HENDERSON.

## EAR

**Lewis: The Inadequacy of the Drainage Sometimes Obtained by the Ordinary Myringotomy in Acute Otitis Media and a Method of Overcoming the Difficulty.** *Laryngoscope*, 1913, xxiii, 121. By Surg., Gynec. & Obst.

The author reports the case of a male, 65 years of age, suffering for a number of weeks with a virulent type of acute otitis media, also afflicted with diabetes mellitus. Mastoid operation had been advised by three physicians but refused. On examination, Lewis found the classical signs and symptoms of acute mastoiditis and advised operation; but patient refused.

Though three paracenteses had been made, Lewis made the fourth which was very a extensive incision. The next day drainage was free; but, on the following day, perforation being closed because of great oedema of the drum membrane, the lower and middle posterior portions of the drum were removed with Hoffman's middle ear punch forceps. In a few weeks the discharge ceased and the perforation closed.

The author has seen several cases of acute otitis media complicated with mastoiditis, in which all the classical symptoms of mastoiditis were present and, though operation was refused, the patient ultimately recovered; but in all of these cases the discharge had a free exit through the drum membrane and there was not marked oedema of this membrane.

He has treated twenty-two cases similar to the case described, i. e., cases in which the drum membrane was so oedematous as to seriously interfere with drainage and to render abortive attempts at improvement by incision of no avail. In all cases he used the punch forceps and in eighteen cases recovery took place without mastoid operation. In only one case the perforation failed to close.

The author advocates this method of treatment only in cases in which time has proven that the usual myringotomy fails to provide the needed drainage.

FRANK C. WINTERS.

**Borden: Diseases of the Middle Ear and Mastoid Cells.** *Boston M. & S. J.*, 1913, clxviii, 221. By Surg., Gynec. & Obst.

A careful study of the records of 454 autopsies following scarlet fever, measles and diphtheria, prove inflammations of the middle ear and mastoid cells are present in a large majority of the fatal cases. Many of the otitis media cases and most of the mastoiditis were not recognized during the illness



of the patients, not because attending physicians were negligent or careless, but for the reason that symptoms were effectively masked by other complications or were entirely absent.

In the clinical cases measles was the first in the number of aural complications, scarlet fever second and diphtheria third. In the fatal cases acute otitis media occurred with the same relative frequency, but the numbers were far greater. The percentage of acute otitis media and mastoiditis in diphtheria was 2.9 per cent in the clinical cases and 82 per cent in the fatal cases. In scarlet fever it was 11 per cent in the clinical and 94 per cent in the fatal cases. In measles it was 28 per cent in the clinical and 100 per cent in the fatal cases. The order of relative frequency of mastoiditis, however, completely reverses this order. Diphtheria being the highest (31 per cent), scarlet fever nearly as great (26 per cent), and measles considerably lower (14 per cent), in the number of mastoids involved.

Bilateral otitis media was far more common than unilateral in all the fatal cases. Bilateral mastoiditis was also more common in scarlet fever and diphtheria, but not in measles.

The appearance of the middle ear and mastoid cells, when diseased, presented at autopsy a sharp contrast in the different diseases. In scarlet fever and measles the fluid found in these special bony cavities was usually described as yellow, white or creamy pus. In diphtheria record after record refers to it as small in amount, thick, tenacious, gummy, gelatinous, semi-solid, etc., and the color as green, yellowish green, brownish green or other colors bordering on this hue.

Of the fifty-nine cases of mastoiditis but six or eight of them were recognized and treated during the life of the patient, and of this number of recognized cases but one mastoid was operated upon, when both were diseased.

In but four cases was a fistulous tract found, leading to the cranial cavity, and in but one of these was septic meningitis present. This is a valuable point in diagnosis inasmuch as it proves the danger

of septic meningitis following mastoid involvement in the contagious diseases, to be comparatively slight. Four cases of meningitis were found in the series, but of this number but one occurred with a distinct fistulous tract leading from the mastoid or middle ear to the cranial cavity.

There was but one case of an infected jugular vein found in the entire series of fifty-nine cases of mastoiditis, most of which were unrecognized and untreated.

Edema of the brain occurred in 80 per cent of the mastoid cases, but it was also found with otitis media without mastoid involvement. It also occurred in a few cases where neither middle ear or mastoid were infected.

A careful study of clinical and fatal cases will show a large number wherein complications of the middle ear and mastoid cells occur simultaneously with acute inflammations in the heart, pleuræ, joints, etc. A further analysis will prove that spontaneous rupture of the drum membrane, or free paracentesis, will be followed by marked relief of symptoms, not only in the middle ear, but in many instances, in the other inflamed organs as well. So often does this close relationship between aural complications and inflammations of the heart, lungs, joints, etc., occur, that the middle ear and mastoid cells may be justly suspected of often being the primary foci of infection, and inflammations in the other vital organs to be secondary to them. The frequency with which all existing complications subside after spontaneous rupture or free paracentesis of the drum membrane is significant of the powerful influence of aural inflammations over other complications in different parts of the body.

The increased demands upon vital organs in the contagious diseases reduce their resistance to toxic influences. If at such a time the middle ear or mastoid cells promote bacterial invasion of the blood stream, the devitalized organs are in a position to readily absorb the poison, and they in turn become an added foci of infection to still further increase the toxæmia of the patient.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

**Graham: Cyst of the Pituitary Fossa; Operation by the Nasal Route.** *Proc. Roy. Soc. M.*, 1913, vi, 61. By Surg., Gynec. & Obst.

Female, aged 37. Failing sight for 18 months, temporal headaches, drowsiness, slow mental reaction and incontinence of urine for several months. At the time of examination, in addition to the above, it was found that the right eye was blind, optic atrophy, and the left retained vision only in the nasal field. Skiagram showed pituitary fossa flattened and enlarged.

The operation was performed through a sub-mucous resection with the incision through the skin from the tip of the nose to the lip. The vomer was twisted from its attachment to the sphenoid. The mucous membrane was elevated from the anterior surface of the sphenoid.

The position of the pituitary fossa was found by taking a line which commences at the junction of the *ala nasi* and upper lip and runs upward and backward to the junction of the pinna with the side of the head. A line commencing at the same spot and traversing the lowest part of the orbit will be found to encroach upon the optic chiasma. The opening into the pituitary fossa was made by placing a long chisel parallel to the correct line, with the cutting edge against the roof of the sphenoidal sinus. When the bone was removed  $\frac{1}{2}$  to 2 dr. of blood-stained fluid rushed out and dura was found lying against the opening. The fossa was irrigated and wound closed and sealed.

The after-treatment included urotropine 45 gr. daily for seventeen days.

Fifteen days after the operation the patient was practically normal except for the vision. There had been no incontinence since the operation.

EARLE B. FOWLER.

**Layton: The Diagnosis of Suppuration in the Accessory Sinuses of the Nose.** *Guy's Hosp. Gaz.*, 1913, xxvii, 47. By Surg., Gynec. & Obst.

The author illustrates the diagnosis of inflammation of the sinuses of the nose by the demonstration of cases, and emphasizes the care and time required when examining a patient suffering from a purulent discharge. The cause is either suppurative inflammation of the mucous membrane of the nose or one or more of the sinuses which empty into the nose. When present, the pus should be carefully wiped away and after ten minutes the nasal cavity examined again for its return. When polypi interfere with the examination they should be removed. The location of the sinus involved is determined by a process of exclusion. The first point to consider is the anatomical position in the nose from which the

pus comes. If from the middle meatus only, it must be from the maxillary or frontal sinuses or from the two anterior sets of ethmoidal cells. If pus comes from between the middle turbinate and septum, it comes from the superior meatus and therefore from the posterior ethmoidal or sphenoidal sinus. Next, the largest and most easily investigated and the one most often involved is the maxillary sinus. Examination should therefore begin with this cavity. It may be explored from the inferior meatus by means of a hollow needle or by the passage of a cannula through the natural opening. When the needle is in position, air should be blown through it to determine whether or not the point is beneath the mucous membrane on the other side of the antrum. A bubbling sound denotes that the point is at the right arch.

On washing out the antrum the presence or absence of pus in the washings tells whether this sinus is involved.

The frontal sinus is next washed, using the same technique as just stated. If no pus appears in the washings the ethmoidal sinuses only are at fault. If the passage to the sinus is obstructed, the swollen mucous membrane should be made to shrink by adrenalin and cocaine or the anterior end of the middle turbinate is removed in order to pass the annula.

If pus continues to return, then the ethmoidal cells are involved. For purpose of treatment it is not necessary, nor is it possible to differentiate between the anterior and middle set.

The safe thing to work upon is an exact diagnosis under the three heads: (a) Is there any sinus disease? (b) Which sinus is involved? (c) Is each of the other sinuses free from suppuration?

WALTER H. THEOBOLD.

**McKenzie: Diffuse Osteomyelitis from Nasal Sinus Suppuration.** *J. Laryngol., Rhinol. & Otol.*, 1913, xxviii, Feb. By Surg., Gynec. & Obst.

McKenzie covers the subject from all sides: history, literature, pathology, etiology, symptoms, diagnosis, and treatment. Diffuse osteomyelitis of the bones of the cranium is one of the rarest complications of nasal sinus suppuration, but it is the commonest serious sequelæ of nasal sinus operations. There are 48 cases in the literature, though this does not cover the number that have been recognized as such, it is used as the basis of study for this paper.

**Pathology.** The original site of the infection is most often in the frontal sinus, though in many cases other sinuses are also involved. There may be a direct invasion of the osseous spaces, canalicular and medullary, of the bony wall of the sinus, or



there may be a primary infection of the efferent veins of the lining membrane of the sinus. The defensive barrier in the form of the lining membrane is destroyed by the operative procedures. A localized osteomyelitis is first produced. A factor in the spread is the probable infection of the diploë where they are close to the area of the wall that is involved. The extent to which the cranial bones may become involved is practically unlimited and this is attributed to the thrombophlebitis of the diploic veins. Microscopically the process is a purulent, rarifying osteitis leading to a more or less extensive destruction of all of the constituent elements of the bones. In the early stage the diploë are hyperæmic, interspersed here and there with drops of pus. This is followed by the conversion of the medullary tissues of the diploë into granulation tissue bathed in pus which exudes from the cut surface. The process follows the vascular channels to the surfaces and collects to form subpericranial abscesses externally and extradural abscesses internally. The pericranium over the abscesses undergoes dissolution and the pus comes to lie in the soft tissues of the scalp, causing doughy or puffy swellings of the scalp which form a typical clinical feature of the disease. The dura is very resistant. Granulation tissue forming on the outside of it tends to keep the infection at bay. There is eventually a destruction of the tables of the skull, the outer usually yielding first. These portions destroyed are exfoliated as sequestræ. The new formation of bone either does not appear at all or is scarcely perceptible until the process is brought to a stop, after which the defects are generally filled in.

The complications in the order of frequency are leptomeningitis, brain abscess, intercranial thrombophlebitis, and subdural abscess.

The bacteriology has been little worked out. Staphylococcus is the organism most frequently found in the chronic forms, though the disease may be instituted by any pyogenic organism.

Under the etiological factors, emphasis is laid on the fact that disease is more apt to follow operations on an acute case than on a chronic condition.

*Symptoms and course.* The disease may run an acute course of three to twelve weeks with rapid progress and almost constant pyrexia. If chronic, the duration may be six months to two years, during which time the disease develops slowly and the progress is broken by periods of quiet. The characteristic finding is a pale, puffy, edematous swelling in and around the open wound, which may have healed and then reopened. This swelling merges imperceptibly into the surrounding tissues with little change in the color of the surrounding skin.

The prognosis is very bad as out of the reported cases there were no recoveries among the post-operative cases.

*Treatment.* The author brings out the need, in the prophylaxis, of early drainage of acute sinusitis with external swelling. In quiet and uncomplicated

frontal sinus suppuration, only intranasal treatment is justifiable (Hajek.) Avoid breaking down the lining membrane as much as possible, in sinus operations.

In the surgical treatment it is important before operation to secure drainage of all other involved sinuses. There must then be immediate and entire removal of the diseased bone. Touch the edges of the bone with phenol, peroxide or iodoform powder. The bacterial invasion is in advance of the naked eye appearance, hence remove a strip of bone beyond the obvious limits of the disease.

Serum and vaccine therapy are of value only after radical operation.

EARLE B. FOWLER.

**Prendergast: Sloughing of the Nasal Septum after Submucous Resection.** *Cleveland M. J.*, 1913, xii, 109.  
By Surg., Gynec. & Obst.

Delays in the repair process after submucous resection are due as a rule to perforations or to tearing of the mucous membrane during operative manipulations. Sloughing of the nasal septum when there has been no tearing of the tissue is a rare sequelæ. Syphilis no doubt is the most important causative factor.

The case reported is one in which fully two thirds of the nasal septum sloughed after a submucous resection. There was nothing in the operative technique to account for this condition nor was there anything in the patient's history or physical examination prior to the operation to indicate that any possible untoward result could be expected. It was a case of latent syphilis in which the past operative behavior of the nose and the positive Wassermann reaction were the first intimation to the patient herself that she was suffering from syphilis.

Mrs. S., age 31, consulted me because of nasal obstruction and headaches. The family history was negative.

The personal history was also negative. She claims that her health, with the exception of severe headaches, has been fairly good. The patient is a well nourished, cheerful woman apparently in robust health. The examination of the nose showed a deviation of the septum situated at the junction of the anterior and middle third. A submucous resection of the nasal septum was done in April, 1912. There was nothing unusual about the operation. There was no perforation or tearing of the mucous membrane. The healing of the parts went on normally until two weeks after the operation when a small necrotic area situated at about the center of the normal position of the quadrilateral cartilage was noticed. She was given an alkaline spray and told to report in one week, but did not return until three weeks afterwards. At this time a large perforation was noted involving almost the entire cartilagenous portion of the septum and part of the vomer and perpendicular plate of the ethmoid. Owing to the typical appearance the patient was told frankly what the clinical picture indicated. She maintained, however, that there was nothing in



her past history or in her physical condition that could be accounted for by the infection, but she consented to a Wassermann test. Cummer and Dexter reported a positive reaction. The sloughing process went on rapidly. After one month of vigorous treatment it was brought to a standstill. The perforation at the present time involves fully two-thirds of the septum including part of the perpendicular plate of the ethmoid and the vomer. The crust formation has stopped. There are no subjective symptoms complained of and there is no external deformity.

**Abbott: Suturing the Nasal Septum after Submucous Resection Instead of Packing.**

*Cleveland M. J.*, 1913, xii, 116.

By Surg., Gynec. & Obst.

Results depend on operation done and not to any great extent on after-treatment. The idea is to have the two layers of mucous membrane held together. Packing prevents nasal breathing and holds back secretions, causing discomfort and maybe sinus infection, extension of sinus infection or troubles with the ears. The suturing largely avoids these. The advantages are: first, nasal breathing and lack of discomfort from retention of secretions; second, limiting the after-treatment; third, closing of incision and any accidental breaks in membranes at same time; fourth, hæmorrhage generally lessened; fifth, dangers from retention of secretion.

The suturing is easily and quickly done with a Yankauer turbinate needle, a Moshier's nasal speculum and a hook. Catgut, plain No. 0 or chromicized No. 00, is used. A continuous suture is used zigzagging back and forth to cover all points. No perforations large enough to cause trouble have been seen — due to this method.

**Tilley: Temperature Chart from an Obscure Case of Streptococcal Infection of the Throat.**

*Proc. Roy. Soc. M.*, 1913, vi, 57.

By Surg., Gynec. & Obst.

The case was that of a boy 10 years of age. The illness began with a slight sore throat, the tonsils were a little red and swollen and the gland under the angle of the jaw on one side tender to pressure. These symptoms quickly disappeared but the temperature continued to rise to 100° F. in the evening. Careful general examination failed to give any clue to the cause of the pyrexia. The general condition was good and spirits excellent. Twenty days after onset, swabs from the region of the right tonsil revealed streptococci in almost pure culture. Streptococci were also demonstrated in a catheter specimen of urine. The rise in temperature became gradually less following the use of an autogenous vaccine of streptococci.

The interesting features of the case are: (a) The very slight throat symptoms and pathological appearance combined with a definite and otherwise obscure pyrexia. (b) The excellent general condition of the patient. (c) Small, slow healing ulcers

appeared on the tonsil after pressure with wool-covered strabismus hook. Bacteriologically the interesting points are: (a) The insolation of a streptococcus apparently identical with that causing the throat lesion, from otherwise normal urine. (b) The patient did not respond to vaccine from throat (staphylococcus and streptococcus) and did to vaccine from pure streptococcus isolated in urine.

EARLE B. FOWLER.

**Harris: The Importance of Preserving the Integrity of Contiguous Structures when Operating on the Tonsils.**

*J. Am. M. Ass.*, 1913, lx, 439.

By Surg., Gynec. & Obst.

The author takes up in brief the anatomy and the physiology of the structures that are related to the hypertrophied adenoid tissues of the throat, shows their importance, and makes a plea for their preservation through greater care in operating and in the more efficient after-treatment.

The velum palati is formed by the insertion or blending of the palatoglossi, the palatopharyngi, the azygos uvulæ, the levator palati and the tensor palati muscles; and in itself or through these individual muscles influence intimately deglutition, respiration, phonation and ventilation of the tympanum. During the act of swallowing, the palatoglossus muscles, which form the anterior pillars of the fauces, contract in such a way as to prevent extrusion of fluids or solids into the mouth while the palatopharyngeus muscles forming the posterior pillars of the fauces assist in performing a similar function for the nose by acting with the other component muscles of the velum drawing it upward and backward and closing the posterior nares. In speaking, these muscles are used in a variety of ways. Thus it is shown what important structures may be injured in removing diseased faucial and pharyngeal tonsils.

Admitting that such an operation has been faultlessly done, perfect local results are not likely to occur unless the granulating surfaces are frequently cleansed and astringents applied according to judgment until healing is assured. Reduction of exuberant granulation tissue by mechanical means is sometimes advisable.

The author believes that many resulting deformities to these structures could be avoided by careful, proper technique in operating and the suggested after-treatment.

EARLE B. FOWLER.

**Whale: The Remote Results of Tonsillotomy and Tonsillectomy; an Analytical Scrutiny of 220 Unselected Cases.**

*Lancet*, Lond., 1913, clxxxiv, 444.

By Surg., Gynec. & Obst.

All the patients had been operated on in Harmer's clinic at St. Bartholomew's Hospital. There were 110 cases of tonsillotomy and 110 of tonsillectomy. For obstructive dyspnoea tonsillectomy is slightly more likely to cure, and much more likely to prevent recurrence. For aural troubles (deafness, Eustachian obstruction with retracted drums, Eustachian



catarrh) tonsillectomy is better. For dysphagia and for nasal affections (snoring, rhinorrhœa, epistaxis) no deduction is warranted as to the operation of choice. For gastro-intestinal troubles, remote affections such as various forms of goiter, and systemic infections (rheumatism, chorea, anæmia, tuberculosis), no strong inference is justified. It is noteworthy that in some cases rheumatism occurred after enucleation in patients who had never suffered before. The following figures show that if rheumatism and chorea be classed together tonsillectomy has a slight advantage. Rheumatism or chorea: Tonsillectomy—cured, 68 per cent; not cured, 32 per cent; tonsillotomy—cured, 63 per cent; not cured, 37 per cent. For tonsillitis, tonsillectomy is the operation of choice, because if as much tonsillar tissue as possible is removed complete in its capsule, there is a greater prospect of permanent cure, and there is no probability of initiating an infection. Laryngitis and functional voice troubles: Tonsillotomy, 26—result: cured, 15 (58 per cent); not cured, 6 (23 per cent); uncertain, 5 (19 per cent). Tonsillectomy, 29—result: cured, 14 (48 per cent); not cured, 14 (48 per cent); uncertain, 1 (4 per cent). Of the two operations, tonsillotomy is more likely to cure functional defects of voice and less likely to leave such sequelæ. For the cure or avoidance of lymphadenitis tonsillectomy is the operation of choice. Hæmorrhage due to the operation: After tonsillotomy, 1 case in 110; after tonsillectomy, 8 cases in 110. An investigation of the records of 3697 tonsil operations affords strong evidence that dangerous hæmorrhage is more than twice as probable after tonsillectomy as after tonsillotomy. Deformity was found in 21 per cent of cases after tonsillotomy, and 23 per cent after tonsillectomy.

He concludes that the disadvantages of tonsillotomy are: (1) the initiation of an infection, whether manifesting itself as tonsillitis, lymphadenitis, or both. Such sequelæ are more likely if a very free and deep removal has been performed than if only a moderate amount of the tonsil has been removed. (2) Recurrence of the trouble for which the operation was performed; except in the case of voice troubles, when recurrence is no more probable than after tonsillectomy. The disadvantages of tonsillectomy are: (1) A risk of serious or even dangerous hæmorrhage at operation. (2) A risk of harmful deformity supervening later; the deformities most likely to cause harm are adhesion of the posterior faucial pillar to the posterior pharyngeal wall and overgrowth of the plica triangularis. (3) A risk of voice troubles supervening later, even without any causative deformity.

DONALD C. BALFOUR.

**Peters: Multiple Papillomata of the Larynx.**  
*Proc. Roy. Soc. M., 1913, vi, 67.*

By Surg., Gynec. & Obst.

The case was that of a child of nine years who had been suffering from a dysphonia for three years.

There were several elongated papillomata of a pinkish gray color, growing in the region of the false cords. The question was asked: "Is the case suitable for the direct or, alternatively, the laryngotomy method?"

Steward agreed with Horne as to the advantage of operating by the direct method and persevering until the papillomata were got rid of. He advised against a thyrotomy because of the danger of a subsequent stenosis of the larynx.

Hope spoke of a similar case in which the direct route had been used four times in one year, followed by the wearing of an intubation tube. The intervals in this case seemed to be getting longer.

Powell said that he believed a tracheotomy should be performed no matter which route was used for the removal, as it would protect the child from spasm or œdema.

McKenzie said that he had showed a girl in whom a tracheotomy had been necessary and this had been of great assistance in the later removals by the direct method. He asked if the members had tried the carbonate of magnesium in this condition.

Rose said that he had attempted to cure two patients with calcined magnesia but without result.

Grant advised repeated removal followed by repeated cauterization. He said that tracheotomy was was often necessary but not a "specific" and cited a case.

EARLE B. FOWLER.

**Freudenthal: Personal Observations with Suspension Laryngoscopy.** *Med. Rec., 1913, lxxxiii, 329.*  
By Surg., Gynec. & Obst.

This new method of Killian's is described by Freudenthal as both easy to learn and of great practical value. The instrumentarium necessary for suspension laryngoscopy consists of an operating table, a so-called gallows or stand, and the hook spatula. These instruments as well as a modification of the handle by Albrecht are described in detail.

In order to operate on a patient the following procedure is carried out: After thoroughly cocainizing the base of the tongue, the pharynx, epiglottis and interior of larynx with a 20 per cent sol. of cocaine, the patient is placed flat on the operating table. The stand having been attached to the table, the surgeon seats himself back of the patient, one assistant to his right and a nurse on the left to hold the patient's head. The nurse may be dispensed with, but occasionally is of much assistance. Under good illumination by the Kirstein head light the spatula is now introduced far back into the pharynx, while simultaneously the assistant adjusts the stand in a horizontal and vertical direction and hangs the tongue spatula in its place. The mouth is now opened wide and the adjustment of the apparatus is completed.

The view obtained is surprising. We see at once the interior of the larynx, more so especially the posterior commissure; we see part of the trachea, the sinus pyriformes, the pharynx, and occasionally the



upper portion of the œsophagus. At the same time both hands are free for operation and the larynx is absolutely open, i. e., there is no hook nor tube in it to encroach upon its lumen. How valuable this is to the surgeon everyone will appreciate who operates by this method. In order to remove certain diseased areas from the interior of the larynx we simply resort to a double straight curette or any other suitable straight instrument, and this can be done in a few seconds.

Freudenthal has operated on a number of laryngeal cases, especially those showing tuberculous lesions or papillomata and concludes that this method constitutes a valuable contribution to our laryngological technique.

**Arnoldson: The Surgical Treatment of Laryngeal Tuberculosis** (Zur chirurgischen Behandlung der Kehlkopftuberkulose). *Arch. f. Laryngol. u. Rhinol.*, 1913, xxvii, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Among 600 cases of laryngeal tuberculosis, the author has performed operative endolaryngeal interference in 150 cases. Usually a double curette was employed; subsequent disinfection with lactic acid or malachite green was not used. There never was any marked post-operative reaction or severe hæmorrhage. The immediate operative result is mostly a very good one. Clinically healing takes place; the function may be as good as normal but recurrences in loco are very frequent. As opposed to the treatment with the galvano-cautery the author emphasizes the rapid functional improvement and the absence of post-operative reaction by his method. He recommends amputation of the epiglottis as this relieves the difficulty in swallowing in 50 per cent of the cases. External interference was employed 3 times by the author: 2 laryngofissures with good result, one case of total extirpation ended fatally in 6 days after the operation.

KAHLER.

**Turner and Fraser: Direct Laryngoscopy, Tracheo-Bronchoscopy and Œsophagoscopy.** *Edinb. M. J.*, 1913, x, 126. By Surg., Gynec. & Obst.

The authors give an account of the direct method of examining the œsophagus with the anatomy, indications and contra-indications, difficulties and dangers and some of the cases from their records. They give the anatomy with special reference to the diameters and lengths that are of importance. They emphasize the importance of local and general examination as a precaution and an aid in diagnosis.

They give the indications for œsophagoscopy as: foreign bodies, cicatricial contractions, malignant disease, cervical or mediastinal tumors pressing on the œsophagus, spasms, paralysis and dilatations or pouches.

Contra-indications as given by the authors include aortic aneurism, cirrhosis of the liver, severe heart lesions, bronchitis, arteriosclerosis, and phthisis pulmonis, though none of these apply in the case of foreign body.

The employment of a local or general anæsthetic depends almost entirely upon the psychology of the patient. The patient should lie either in dorsal or left lateral position with the knees well up to straighten the spine and an assistant holding the head. For short examinations the sitting posture may be used.

The authors believe it best to carry out the whole examination under the direct control of vision. The tube is passed over the epiglottis and gently on into the space between the arytenoid cartilages and the posterior wall of the hypopharynx. Pressure forward with a slight rotary motion is used and the patient is told to swallow to relax the sphincter. Once the mouth of the œsophagus is passed, the tube slips on easily.

The cervical œsophagus is closed for about 5 cm. and appears as a transverse cleft. The thoracic portion is roomy and has a more or less quadrilateral lumen. The inner tube must be introduced to see farther and moved from side to side to see the walls. Somewhat beyond this point, if the distal end of the tube is pressed forward and to the left, the cardia appears as a rosette. It is also important to examine carefully during the withdrawal of the tube.

On the left anterior wall, in the region of the bifurcation of the trachea, two bulgings can be seen, the upper the pulsating arch of the aorta, the lower the left main bronchus. Sluggish peristaltic waves should be seen passing in about six seconds from the mouth to the cardia.

There are four points at which the œsophagus is narrowed and these are the most frequent locations of pathological strictures. They are: (1) cervical, (2) aortic, (3) bronchial, (4) diaphragmatic. No attempt should be made to force a tube through a stricture. For after treatment, rest in bed and sterile liquids is advised.

The article is concluded by a brief summary of the most common pathological conditions and reports of seven cases illustrating the findings and results of examination in some of these.

EARLE B. FOWLER.



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